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THE AUTOMOBILE

Recent Progress in Highway Improvement in Pacific Coast States

By James W. Abbott.

Part I

One of the Improved Highways in Whatcom County, in the Northernmost Part of the State of Washington.

TO MY COMRADES IN THE GOOD ROADS CAUSE:

The enthusiasm with which I worked with you and for you during the years that I was in the Government Highway Service has not been quenched through disuse. The need is still as insistent and the cause as worthy as it was while I was actively working.

James W. Abbott.

There is no shade of question in my mind that through the automobile is coming the success which is going to crown all the efforts of those laborious years.

I believe that if every man who owns an automobile in the United States and who prays to God for better roads to drive it over, would assist insofar as he might in the work for good roads the result would be effective beyond any of our comprehensions.

It has been with the earnest wish to add my mite to this effort that I have taken from my work time which I could ill afford to give to prepare this series of articles. It has been a labor of love for the cause I love in the hope that some good might come of it. Most cordially yours,

James W. Abbott

Pioche, Nev.,
June 1, 1908.

DURING the years in which I represented the United States Government in its work for highway betterment throughout this region, I centered my efforts upon two plans which I believed would be the most effective in securing the desired results.

The first of these was to get instituted generally in all the counties of these Pacific Coast States practical methods of utilizing the activities of convicts in road construction. The second was to arouse a public sentiment which should finally recognize the importance of a first-class highway, leading from British Columbia to Mexico, approximately parallel to the coast line.

The argument for the use of the convict in road construction may be briefly stated as follows: We restrain the criminal of his liberty for the benefit of society. To obtain enduring, beneficial results, our penal methods must be corrective rather than punitive. The fear of an avenging law is an influence of minor importance in deterring crime. The strongest impulse for good conduct is good character. Moderate, healthful exercise of body and diversion of mind will prevent the normally good citizen whom mischance has brought within prison walls from lapsing into a criminal, while it will restore normal health to many perverted natures.

The building of public works which could not otherwise be undertaken is the sole occupation in which convicts can be employed which will not only not encroach upon free labor, but which will actually immeasurably increase the demand for the services of free labor, benefiting at the same time the criminal and the free man, and tending to an elevation of moral standard throughout the community.

No influence more destructive upon character can be imagined than enforced idleness; while to allow the activity of the convict to be employed in making products for sale at prices below the normal market is degrading to American labor.

There is no character of public improvement of such general importance to all the people as making improved highways. The activities of our convicts throughout the country constitute in the aggregate an enormous force, and I believe that one of the most vital problems of our civilization lies in solving the question of how to use these activities most effectively in constructing highways.

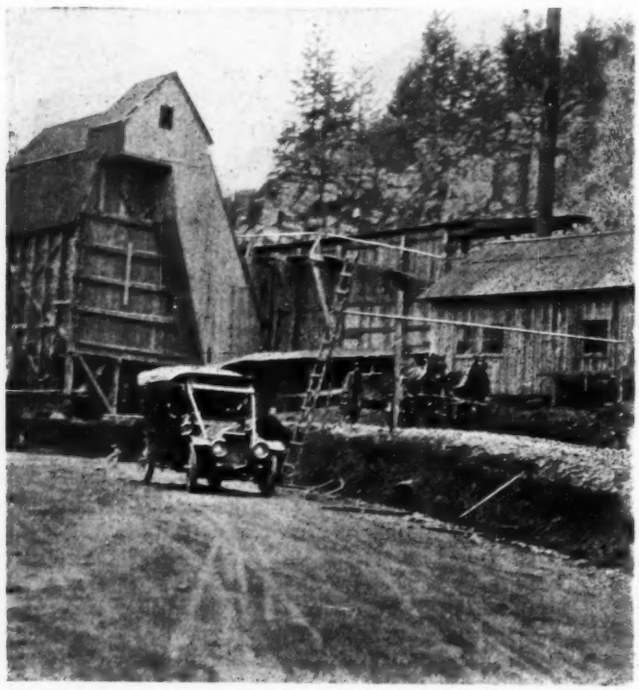
I made an exhaustive study of every method attempted along this line in the United States. In Washington and Oregon I

centered my efforts to get policies adopted which should more and more, as time went on, employ these activities for the construction of highways. My recent visit to Washington and Oregon was the first which I had made in somewhat over two years, and I was overwhelmingly astounded and gratified at the progress which has been made in those States during that period.

Upon the 9th of March, 1907, the following legislative enactment became the law in Washington:

All convicts confined and not otherwise employed shall be employed under authority of the State Board of Control, in charge of the superintendent of the penitentiary, or of such other persons in the employ of the State as the State Board of Control shall direct, in the building of State roads in this State. All expense of whatever nature incurred through such employment shall be paid from the fund appropriated by the State legislature for the construction of the particular road or roads upon which such convicts may be employed. The places where and the manner in which work shall be performed upon the said roads by such convicts shall be designated by the State Highway Board.

The same Legislature appropriated the sum of $225,000 to be used in the construction of twelve roads specifically defined. One of the roads thus provided for in Okanongan county was



Convict Camp at Kelly Butte Stockade, Oregon.

selected for making the first experiment with convicts under the law above quoted. The unqualified success of this experiment in all ways is calculated, in my judgment, to lead to results for road betterment more far-reaching than any other enactment ever placed upon the statute books of this nation.

The report of Joseph M. Snow, highway commissioner of Washington, recently issued, shows that the average value of the daily work of a convict on this road was $4.03, measured by the bids of contractors before it was definitely decided to use convict labor. Being the first experiment of its kind, the methods and system employed were necessarily tentative, and Mr. Snow says in his report: "With the experience gained, the expense of carrying on this class of work can be materially reduced in the future." He had already figured, charging up all expense of outfit, transportation, supplies, salaries, and engineering to the road fund, that the convict work represented a profit of about 58 per cent. over the bids submitted.

The closing page of his report is, to my mind, the most cheering message to the good roads advocates of the United States which ever has been or ever could be written by any man. It shows earnestness and enthusiasm, and is as follows:

The financial benefit to the public I have shown; and referring to the reformatory influence on the prisoners, it may be said that a glance at the men who have been employed at State Camp No. 1 shows them hale, hearty and well contented, and shows that they have lost the peculiar appearance that comes from confinement in the jail or penitentiary. The camp has been kept in excellent, satisfactory condition. No cases of sickness have occurred, and but one slight accident whereby a man slipped from the face of a bluff and fractured his ankle. Three men were paroled during the season for good conduct, and this had an excellent effect on those remaining. The men who were furnished for this work were not those noted at the penitentiary for a desire to work, but under the exceptional management of George F. Charlot, who has acted as chief guard and superintendent of construction, the men were encouraged to change their methods and developed into a first-class crew of workmen. They worked regularly eight hours each day, losing only two quarter-days on account of inclement weather or other causes during the three months and a half they were at the camp. Each man seemed to take a pride in the work, and all of the men with whom I conversed desired to remain in this kind of employment. They are trusted to such an extent that no stripes were worn and no irons of any description were used. In fact, one passing over the work, not knowing the character of the employes, would never have known that it was a convict crew. It might safely be said that the men employed at State Camp No. 1 left there in far better physical, mental and moral condition than they arrived there. The success of the proposition having been so satisfactorily demonstrated, it is now proposed to place a larger crew on State Road No. 7, known as the Snoqualmie Pass Road, in the early spring.

With reference to the character of the work, Mr. Snow says: "The cuts in solid rock run from twelve to forty-five feet in depth, and the embankment from six to twenty feet in width, the maximum grade on the road being 4 per cent., while the greater part of it is level." The half-tones which accompany the report are very realistic, and, while I have not seen the road, I believe it would be safe to hazard the statement that this road and the Scenic Highway from Las Vegas to Santa Fe, New Mexico, both constructed by convicts, reach the highest standard of mountain road construction ever attempted in the United States.

What Has Been Done in the State of Oregon.

In the State of Oregon, Judge Lionel R. Webster, the county judge of Multnomah county, in which Portland is situated, was always my most effective colaborer for the use of convicts in road building. In season and out of season, for years, Judge Webster fought for the adoption of this policy. In that State all highway matters come under the control of the county judge, and in many respects it has proved to be a very wise plan. County judges, as a rule, are men of high intelligence and keen discernment. They seek the welfare of their constituents, and are earnest in their endeavors to promote the welfare of the counties over whose courts they preside. No higher type of reformer has been raised up by Providence in this country than Judge Webster. He could direct only the employment of the convicts sentenced in his own court, but began years ago with these to evolve a feasible system for utilizing their activities in improving the roads adjacent to the city of Portland.

The first time I went with Judge Webster to see what his convicts were doing, I found them in a crude stockade, breaking rock by hand. It was a poor quality of rock, and, of course, progress was slow and unsatisfactory. But Judge Webster kept at it, and added to the highway system in that county considerable mileage of first-class macadam roads. He labored at Salem with the Governor and with the Legislature, but Oregon Legislatures are not as enlightened as Washington Legislatures, and they are slower to appreciate the importance of the highway question generally.

The State of Washington had, to lead its movement for highway improvement, a great man with unlimited wealth and influence, Samuel Hill of Seattle, the first and only president of the Washington Good Roads Association. He was elected at a convention called by himself in Seattle in October, 1902. Since that time Mr. Hill has devoted his superior talents, indefatigable energies and extraordinary personality to effecting the emancipation of that State from the bondage of bad roads. He has

spared neither time nor money. He secured from the Government that genial good roads enthusiast, Sam C. Lancaster, to come to Washington and engage in a campaign of proselyting. Through his influence, Sam Lancaster has been installed in a permanent chair in the University of Washington, at Seattle, where his sole duties are to teach the students technical methods of road construction. Sam Hill and Sam Lancaster went up and down the State of Washington, preaching the gospel of good roads until they had it fairly set on fire, and out of that campaign came the enlightened legislation which I have previously alluded to.

Judge Webster had little of such aid. The State of Oregon possesses no Sam Hill. No other State in the Union possesses a Sam Hill. It is one hope in which I have indulged for years that there might be other Sam Hills rise up in due time to serve their country as he has served it.

Politics and roads never have closely coalesced, and Oregon has thus far proved no exception to the rule. But Judge Webster, by the irresistible force of his earnest character and energetic temperament, has gone forward in the good work. It was to me a most affecting privilege which I enjoyed when I visited the rock quarries at Kelly Butte, seven miles from the county courthouse in Portland. This is the name of an enormous intrusive dike of first-class rock for road-making purposes.

I found at Kelly Butte stockade, bunk houses, messrooms and kitchen, and a complete plant operated by steam power for crushing rock. I found every convict of Multnomah county working industriously, happily and effectively. I found that this rock was being put into condition for making macadam roads and delivered automatically to wagons at a maximum cost of 27 cents a cubic yard, while the entire cost of producing this result was little less than would have been the cost of maintaining and guarding these convicts in idleness. In other words, I found that Judge Webster was producing material for first-class macadam roads practically without cost. The result is the highways leading out from the city of Portland average better than the highways leading out from any other large metropolis on this coast, or it may be west of the Mississippi.

Judge Webster's zeal will not flag nor his efforts be abated. If he lives, it is absolutely certain that, with this plant at Kelly Butte for an object lesson, he will show the people of Oregon the way to most effectively develop their resources. When the people clearly see any great need, they get it. The political puppets in that State will be swept from the stage as a man would sweep a chessboard, and in their place will come men ready and willing to heed the voice of the people.

GOOD ROADS AGITATION IN CENTRAL MASSACHUSETTS

SPRINGFIELD, MASS., June 15.—So far the auto season cannot be said to be on in this vicinity to any great extent, but its rapid approach can be foretold to a certain extent by the good roads agitation that is uppermost at present. Because it is feared that a two-mile stretch of very bad road in Becket known on the Springfield side as Mowrey's hill and Jacob's Ladder on the Berkshire side, will drive automobilists off that route, action has been taken by a special committee of two hotel men from this city and a representative of the Springfield Automobile Club toward raising funds for temporary repairs. Already $500 has been pledged by hotel men along the route between this city and the Berkshires for the work, which it is estimated will cost about $720, and it is probable that the Automobile Club in this city will raise the rest of the money. The bad strip of road begins at the Bonnyrigg Four Corners and extends as far as Jacob's Ladder, and has been rendered treacherous and hard of travel because of huge boulders and earth washed down from the mountains by the Spring rains. These repairs will be made pending the building of a State road along this route, a bill for which has been passed in the legislature to take effect next year.

Another action taken by the local club for the benefit of autoists passing this way, was the selecting of a new route to the eastward to take the place of the new State road between Palmer and Warren, now in process of construction. The necessary signs have been posted showing the new road to be as follows: By way of the Boston road to the Five Mile Pond school house, to Parker street, to Ludlow, to Red Ridge, to Three Rivers, to Palmer, to Brimfield and Brookfield. It is figured that it will be along the middle of July before the State road is completed, but this route will be subject to change as the road progresses.

The local club has been asked by the Hartford Automobile Club to join it in an attempt to get general road improvement between that city and this. The condition of this road has been much criticised and is so bad in some places, mostly in Connecticut, that autoists are being warned away from it and are taking to the shore line on their trips between New York and Boston. The Springfield club, however, has not taken the matter up because, with the exception of a stretch of road three-quarters of a mile long near Longmeadow, the roads this side of the State line are in excellent condition. The strip mentioned as an exception is not so very bad or so very good and will be improved in the very near future. President Mark Aitken, of the local club, expressed the opinion that the State of Massachusetts had done its part as regards the roads in this section and that the club believed it was up to the state of Connecticut to see that its roads were of a character to encourage touring.

AMERICAN COMMISSION TO INTERNATIONAL ROAD CONGRESS

WASHINGTON, D. C., June 15.—President Roosevelt has directed that this nation be strongly and officially represented at the International Road Congress to be held at Paris the week beginning October 11, and credentials have been issued naming Logan Waller Page, Director of the Office of Public Roads of the U. S. Department of Agriculture, Chairman of the Commission. The other members named are Colonel Charles S. Bromwell of the United States Corps of Engineers, now serving as Superintendent of Buildings and Grounds of the District of Columbia, and Clifford Richardson of New York, an eminent chemist and one of the world's acknowledged authorities on bituminous road building materials.

This coming Congress, which will be attended by distinguished delegates from every country in the world, is regarded by highway engineers and experts as probably the most important ever summoned for the discussion of an economic question. Its need is the direct outgrowth of the advent of the automobile.

Invitations have been transmitted through the office of public roads to State highway commissioners, city engineers and park commissioners to attend the Congress, and already a large number of delegates have been selected. It is confidently anticipated that this will be but the opening gun of a universal movement for good roads due to the possibilities of their extended use on long runs by means of the automobile, and the presence of an American delegation is cartainly an encouraging sign.

ENGLISH CAR DRAWS GRAND PRIX STARTING HONOR

PARIS, June 10.—England drew the lucky number at the Automobile Club of France, thus allowing one of the Austin cars to start first in the Grand Prix on the Dieppe circuit July 7. After the Englishman the first of the Mercedes cars will rush away over the triangle by the seashore, and will be followed by others at intervals of one minute, in the order: Motobloc, Renault, Dietrich, Benz, Fiat, Brasier, Porthos, Opel, Bayard-Clément, Itala, Weigel, Mors. Thomas, with Lewis Strang at the wheel, Panhard, and Germain.

This will end the first series; the second series will be formed by number two car from each of the firms mentioned with the exception that Thomas, having but one car, the second Mors will be followed by a Panhard. The same applies to the third series. Lewis Strang, who came down to the library of the Automobile Club of France in company with Harry S. Houpt and Montague Roberts, found that his usual good luck deserted him, for the ball that he drew out of the bag and handed to Chairman Rene de Knyff bore the starting number fifteen.

Almost at the last minute, Emile Mors came into the A. C. F. clubhouse and handed over $4,800 in payment of double entrance fees for his three Mors cars. Rochet-Schneider, who was looked upon as an eleventh-hour entrant, failed to come forward with the necessary cash. Total entries for the Grand Prix race thus stand 49, of which 24 are French, 9 German, 6 Italian, 6 English, 3 Belgian and one American. For the voiturette race to be run over the same course the preceding day there are now 65 cars, all of them French with the exception of the Isotta-Fraschini and Martini teams. A Delage car will be the first to start in this event. The number of entries constitutes a record, the total being greater than has ever been gathered together for any speed event, and the Grand Prix cars alone being superior in number to those of any previous big race held in Europe.

Since landing at Havre from the cross Channel steamer from Southampton, the American team for the Grand Prix has not wasted its time. Training quarters having been secured at the Grand Hotel, Dieppe, and close acquaintance was made with the course by means of the touring car. Although geared far too low for the fast French roads, the Thomas Flyer swept over the 47 miles of perfect macadam in so much under the hour that Strang would certainly have difficulty in pleading "Not guilty" to a charge of exceeding the French speed limit.

Various formalities having to be accomplished in Paris, the entire team ran down from the seashore to the capital last Sunday, a French Protos racer, with Emile Stricker at the wheel, going ahead to show the way, Strang following on the roaring Thomas, and the rest of the team packed, together with their baggage, in the touring car which Knipper took care of.

The Prothos, which claims to have something like 120 horsepower within its six cylinders, set a merry pace that Strang had no difficulty in duplicating. Knipper was shaken off on every stretch of open road, but in the villages, where the racers had to cut down to a noisy crawl on account of the Sunday merrymakers, the touring car with its fluttering American flag was always able to run close up.

French government officials have no cognizance of New York-Paris runs, Brighton Beach twenty-four-hour and other records, and before Montague Roberts could get behind the wheel of a Thomas touring car he had to take an inspector for a five-mile run through Paris. The report of the inspector was that he guessed "Monty" was fit to drive any type of automobile and a first-class permit was issued on the spot.

The cylinder bores of the racer having been verified and stamped and spare cylinders treated in a similar manner, the racing car and full team will return to Dieppe and make such further road tests as are necessary in the neighborhood of the circuit. Racing cars are not allowed on the course, so that most of the driver's training will have to be done with the touring car. It is practically certain that the course will be opened for official trials a few days before the race, but the period is not likely to extend over four or five days, and will be limited to two or three hours each morning. In this respect all foreign cars are at a disadvantage, the club being obliged to close the roads to racers a couple of months before the event in order to allow the bad spots to be remade and the whole surface to be tarred. There are at present portions that have been dug up by anti-skid tires, but all such spots are being entirely relaid and the tarring apparatus will provide 47 miles of highway absolutely dustless. Already the greater portion of this work has been accomplished.

Work on the grandstands and gasoline stations is in an advanced condition. The entire ground at the starting line has been marked out, the big trench running the entire front of the grandstand has been dug out, and the tunnel connecting the outside with the inside of the circuit has already been pierced. The foundations of all the buildings are laid, and everything is so advanced that there should not be any eleventh-hour hustling. In some of the villages stout barricades are already erected; in the open country light fencing is lying in readiness to be put up.

RULES PUBLISHED FOR CIRCUIT DES ARDENNES.

BRUSSELS, June 3.—The sports committee of the Automobile Club of Belgium has issued the rules and regulations for Belgium's two most important races for the season—the Circuit des Ardennes and the touring car race for the Liedekerke cup. Both events are scheduled to be run August 12, the former over a course of 600 kilometers and the latter over the same circuit, but the distance to be only 400 kilometers. For some time it has been said that the old Ardennes circuit would be used, the one including on its route the following towns and villages: Bastogne, starting and finishing place; Longlier, Offaing, Leglise, Anlier, Habay-la-Neuve, Corne du Bois des Pendus, Martelange and Bastogne. A visit at the Automobile Club of Belgium headquarters this afternoon, however, brought out the fact that Baron de Crawhez is in the Ardennes district trying to discover some new roads. There will not be much of an entry list by Belgian manufacturers, owing to the great efforts made for Belgian representation in the Grand Prix next month, but most of them probably will nominate cars for the touring car event.

COUPE DE LA PRESSE POSTPONED TILL 1909.

PARIS, June 10.—Constructors having failed to respond in sufficient numbers to the invitation to take part in a fuel consumption race on the Dieppe circuit next August, the Automobile Club of France has officially announced that its Coupe de la Presse is postponed until 1909. In reality the event is definitely abandoned, for it is doubeful if the competition will be held even in 1909. This abandonment deprives France of the only event for stock touring cars this year, the Coupe de la Presse being designed for stock chassis stripped under certain restrictions, and competing for speed with a limited amount of gasoline. All the interest of the year centers around speed tests, touring competitions in which there are as many winners as classes failing to solicit interest.

Germany intends to be well represented in the Florio Cup race at Bologne, Italy, September 6. The Mercedes, Opel, and Benz have entered teams of three cars each, while it is thought likely other German makers will come in later.

Point Breeze Track Again Sees Spirited Racing

How the Cars Lined Up on Philadelphia's Historic Race Course Ready for the 50-mile Free-for-All.

PHILADELPHIA, June 15.—It was Autocar day at Point Breeze track Saturday, when the Quaker City Motor Club held its annual spring meet. The Ardmore-built car not only captured first place and the cup in the big smoke event—the free-for-all—but took second honors as well, and this despite the fact that its 28-horsepower was pitted against the 40's 50's and even 70's of some of the most powerful American cars on the market. It was a case of heavy driving of moderate-powered cars winning over the tire-punishing rushes of much more powerful machines on a track which turns tricky to a degree and requiring nursing even under such favorable conditions as obtained last Saturday.

Fourteen cars faced Starter Fred Wagner in the big race, and the track was so narrow that two lines were necessary—ten in front and four in the rear. In the awful roar of the exhausts, the crack of the gun was hardly audible, but the cars were sent away to a good start, despite the much-too-close line-up. The first car to show out of the cloud of smoke and dust which followed the contestants around the first turn was the Pullman "40," driven by "Bob" Morton, the hero of last winter's Philadelphia-Savannah race. In the first mile he opened up a gap of 100 yards on the bunch. But the big American "50," with Wally Owen at the wheel, soon came out of the ruck and set sail for the leader. Slowly but surely "Wally" closed up on "Bob," and shortly after the completion of the eighth lap went to the front with a burst of speed which set the crowd wild.

Had Owen been content to maintain a small lead till the close of the race he might have won; but he made the mistake of trying to lap his pursuers, not once, but twice, and again. This brought about his undoing, for after holding the lead for 25 miles, the grinding on the turns put one of his tires to the bad, and on the next lap he ran into the infield for repairs. Morton lost no time in moving to the front; but once there, he made the same mistake as "Wally"—he opened up wide and attempted to put miles of daylight between his Pullman and the oncoming bunch. But the turns got him, too, before long, and on the 29th lap the York-built car went into quarantine with a deflated tire.

Meantime the two Autocar "28's," driven by E. F. Frease and J. F. Brown at a moderate gait—a trifle under 1:20—had made up a 1 1-2-mile default and swung into the lead amid a roar from the crowd of 7,000 which hugely enjoyed the performance of the local cars and immediately began to root for a victory. The big Thomas "70" of Charley Howard, which earlier in the day had made the fastest time of the meet, but which had lost time through tire trouble, then challenged the Autocar duo, but the increased speed soon resulted in more work for the medicine men in the infield, and it lost its opportunity.

The only cars that now had a chance against the Autocars—and that only in the event of a breakdown of the latter—were Frank Yerger's stripped Studebaker "30" (the self-same car that was beaten in the duel with Morton's Pullman in that slimy race to Savannah) and the 35-horsepower Mitchell, driven by William Freitag. But neither of the latter had the speed to more than hold the Autocars even, and the latter kept on the even tenor of their way reeling off 1:20 miles. By the time the big fellows swung out again in pursuit their lead was too big to be overcome in the short distance yet to be covered, and the Ardmoreites registered a one-two victory in rather hollow style in the slow time of 1:06:51.

The fastest race of the day was the 10-mile event for stock chassis listed at $4,001 or over. It was a ding-dong affair between Howard's big Thomas and Wally Owen's American. Each car was in the lead several times, but on the last lap the Thomas went out in front, and lasted to the tape, although the American was beaten out but by the narrow margin of two-fifths of a second—the only nose finish of the day.

Although unsuccessful in the big race, "Bob" Morton scored in both the $2,001 to $3,000 stock chassis races—at 5 and 10 miles—beating out a brother Pullmanite, C. B. Kirkham and Jack Harkin's Thomas-Detroit "40" in the short event, and again Kirkham and J. F. Brown's Autocar in the ten mile. One-two twice for the Pullman should have satisfied almost anybody, but Manager "Lee" French, of the local agency, was heartbroken over Morton's bad luck in the big race.

Counting the fact that it made the fastest time in the mile trials, the Pennsylvania "50," driven by Len Zengle, was also a double winner. It beat out A. G. Van Tine's Garford "40" in a

Winning Autocar that Captured the 50-mile Free-for-All.

special five-mile match race and in the trials did a 1:10 mile, beating out the Thomas Flyer, the Garford and the Jackson.

"Pop" Parkin entered his just completed "Big Joe" in the free-for-all, but experienced trouble from the start. He kept pluckily at work, however, and the car was running at the finish gun, although miles behind the winner.

In a special race for Autocars, John Archfield beat out the winning and place cars in the free-for-all, sweeping under the wire in 4:00 flat.

William Freitag's Mitchell "35" easily disposed of the 24-horse-power Maxwell, driven by William David, in the five-mile race for gasoline stock touring cars listed at between $1,251 and $2,000. The summary:

ONE MILE—GASOLINE STOCK RUNABOUTS, $850 OR UNDER.

1.	Buick	18	Edward Wilkie	1:34
2.	Ford	18	J. F. Graham	1:37 3-5
3.	Maxwell	14	W. M. David	1:44 2-5

THREE MILES—GASOLINE STOCK RUNABOUTS, TOURABOUTS, TOURING CARS, TOURING RUNABOUTS, $851 TO $1,250.

1.	Buick	18	Edward Wilkie	4:24 1-5
2.	Mitchell	20	William Freitag	5:01 1-5

FIVE MILES—GASOLINE STOCK CHASSIS; COMPLETED CAR LISTED AT $2,001 TO $3,000.

1.	Pullman	40	Robert Morton	6:17
2.	Pullman	33	C. B. Kirkham	
3.	Thomas-Detroit	40	Jack Harkins	

FIVE MILES—GASOLINE STOCK TOURING CARS, $1,251 TO $2,000.

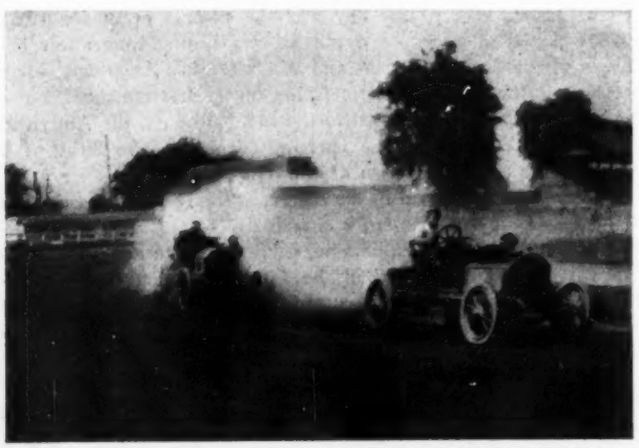
1.	Mitchell	35	W. Freitag	7:21
2.	Maxwell	24	Wm. David	

FIVE MILES—SPECIAL MATCH RACE, STOCK CARS.

1.	Pennsylvania	50	Len Zengie	6:27
2.	Garford	40	C A. G. Van Tine	

TEN MILES—GASOLINE STOCK CHASSIS, COMPLETED CAR LISTED AT $2,001 TO $3,000.

1.	Pullman	40	Robert Morton	12:27 3-5
2.	Pullman	33	C.B. Kirkham	
3.	Autocar	28	J. F. Brown	



Morton in Pullman Winning Five-mile Stock Car Class.

TEN MILES—GASOLINE STOCK CHASSIS, COMPLETED CAR LISTED AT $4,001 OR OVER.

1.	Thomas Flyer	70	Charles Howard	12:00 2-5
2.	American	50	Wally Owen	12:00 4-5

FIFTY MILES—FREE-FOR-ALL.

1.	Autocar	28	E. H. Frease	1:06:51
2.	Autocar	28	J. F. Brown	
3.	Studebaker	30	F. H. Yerger	
4.	American	50	Wally Owen	
5.	Mitchell	35	Wm. Freitag	

TIME TRIALS—ONE MILE.

1.	Pennsylvania	50	Len Zengle	1:10
2.	Thomas Flyer	70	Charles Howard	1:16
3.	Garford	40	A. G. Van Tine	1:18
4.	Jackson	30	J. Robinson	1:27

THREE MILES—SPECIAL FOR AUTOCARS ONLY.

1.	Autocar	28	John Archfield	4:00
2.	Autocar	28	J. F. Brown	
3.	Autocar	28	E. H. Frease	

CHICAGO MOTOR CLUB'S 1,000-MILE TEST.

CHICAGO, June 15.—Final surveys of the four routes that will be used in the Chicago Motor Club's 1,000-mile reliability run June 24-27, show that the contesting cars will be required to travel 1,014.2 miles, divided, into daily trips of 267.7, 243.9, 258.1 and 229.5 miles. In making these trips the cars will pass through a territory which is regarded as a fruitful selling field, it being peopled by rich farmers who are becoming interested in motor cars. The roads are reported to be above the ordinary, except, of course, there are a few bad stretches which will test out the cars.

First day, June 24.—The cars will be sent on a trip to the north into Wisconsin, going through Highland Park, Lake Forest, North Chicago, Waukegan, Zion City, Kenosha, Lake Geneva, Delavan, Emerald Grove, Janesville, Wis., Beloit, Rockford, Ill., Rochelle, De Kalb, St. Charles, West Chicago, Lombard, Elmhurst and back to Chicago. The total distance for this leg of the run is 262.7 miles, with checking stations at Kenosha, Janesville and Rochelle. This route was mapped out by O. G. Temme and T. T. Roe in a White steamer.

Second day, June 25.—The cars go west, hitting Elmhurst, Lombard, Glen Ellyn, Naperville, Aurora, Big Rock, Little Rock, Somonauk, Wedron, Ottawa, Lowell, Tonica, La Salle, Earlville, Leland, Somonauk again, Sandwich, Yorkville, Aurora, Downers Grove and Lyons, the mileage being 243.9, according to the odometer reading of the Dorris, driven by Charles P. Root. The checking stations will be at Aurora, La Salle, Ottawa and a second time at Aurora.

Third day, June 26.—Cars will follow the route marked by Harry P. Branstetter in a Wayne roadster, a journey of 258.1 miles in length, which goes into Indiana by way of the Halsted street route, touching Riverdale, Oak Glen, Munster, St. Johns, Crown Point, Merrillsville, Valparaiso, La Porte, Tea Garden, La Paz, Plymouth, Lakeville, South Bend, New Carlisle, Rolling Prairie, Michigan City, Burdick, Chesterton, Porter, Hobart, Highands, Hammond and South Chicago. The checking stations will be at La Porte, Plymouth, South Bend and Michigan City.

Fourth day, June 27.—The scene shifts again to the west, following a trail brazed by C. A. Tilt and F. H. Trego in a Diamond T roadster, the distance being 229.5 miles, and passing through Addison, Bloomingdale, Ontarioville, Elgin, Huntley, Marengo, Belvidere, Cherry Valley, Rockford, Byron, Oregon, Honey Creek, Chano, Kings, Rochelle, Steward, Shabbona, Waterman, Hinkley, Big Rock, Aurora, Downers Grove and Lyons. The checking stations will be at Elgin, Rockford, Rochelle and Aurora.

A MILLIONAIRE MEET AT LONG BRANCH.

Prominent Long Branch summer residents, whose names for the most part are conspicuous in the motor car fraternity, have formed the Elkwood Park Automobile Association, and will run a race meet at the old mile circuit, whereon in earlier days of the sport similar contests were held on Fourth of July.

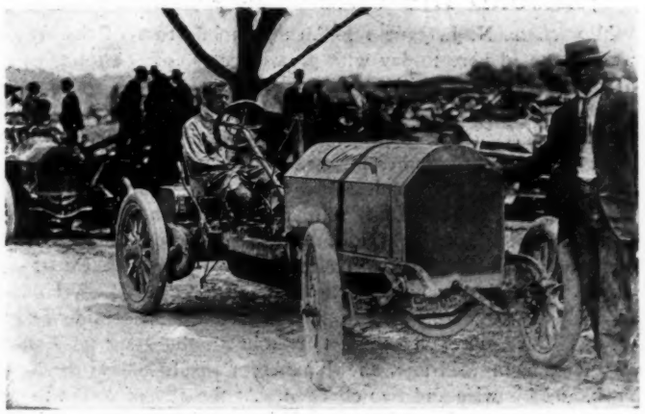
The officers of the new association are: President, Hon. Charles C. McFadden, Mayor of Long Branch; vice-president, Robert Guggenheim; treasurer, William B. Anderson; secretary, T. Francis Moore; governors, Fred Lewisohn, Harry Payne Whitney, W. E. D. Stokes, P. J. Casey, Walter Lewisohn, Martin H. Vogel, and Col. T. J. O'Donahue.

The program is as follows: 100 miles for Guggenheim $250 trophy; 50 miles free-for-all for Lewisohn $200 cup; 10 miles for amateurs under A. A. A. rules; 5 miles pick-up race for fully equipped touring cars to stop and pick up a passenger each mile; time trials against circular track records.

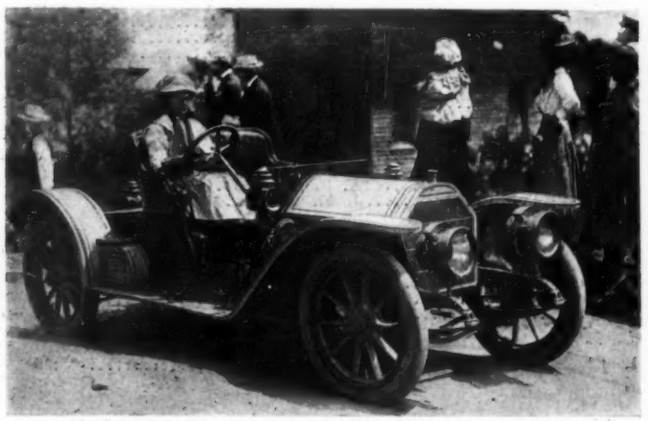
CHADWICK SCORES AGAIN AT CLEVELAND CLIMB

CLEVELAND, June 15.—Following its victories at other important events of the kind, the Chadwick has invaded the home city of what are reputed to be the fastest hill-climbing cars in the world, the White and the Stearns, and carried off the honors in the Cleveland Automobile Club's annual hill-climb, but through an unfortunate combination of circumstances there was practically no competition for the winner in its own class, Walter White still being in the hospital and the Stearns interests not entering any of their cars, in conformity with their policy of only being represented by amateur-owned machines. However, the Stoddard-Dayton, of far less power, proved itself a formidable rival to the big six-cylinder champion and pushed the latter's times very closely. In fact, the smaller car's performance, and the driving of Mrs. Kenneth R. Otis in the event for the amateur championship of Cuyahoga county, in her four-cylinder Stearns roadster, were the features of the day.

Alone in the car, she handled the wheel like a veteran of many racing meets and the speed at which she sent the racy-looking car up the incline brought forth a cheer from the crowd, while the announcement of her time of 54 3-5 seconds was responsible for the popular ovation which greeted her as she returned down the hill after making the record climb. The trophy offered in this event was a solid silver cup donated by the Warner Instrument Company, and must be won three times in succession before passing permanently to the victor. The name of Mrs. Otis will be the first to go on it, and she has signified her intention of competing for it again next year.



Haupt and His Fast-flying Victorious Chadwick.



Mrs. Otis and Her Prize-winning Stearns Roadster.

Taken all in all, the work of the Stoddard-Dayton was the most remarkably consistent performance of the entire program, for, competing with cars of its own classification in every event, it took three firsts and a second, and in every case bettered the times of its nearest competitors by several seconds. Cleveland has never seen a better electric event, the Columbus and Baker machines carrying off the honors. In the first event—that for electrics selling under $2,000—the Columbus took first place in 1 minute, 15 seconds, winning over the Baker and Babcock machines, while in the event for electrics selling over $2,000 the Baker roadster, running alone, made the climb in 1:7 flat.

Another feature event was the piston displacement handicap for all makes of gasoline cars, irrespective of power or number of cylinders. In this a single cylinder stands as good a chance as any four or six, for the winning car is determined by finding what percentage of efficiency is developed. In this event the Knox won, showing 77.5 per cent.—a very excellent performance, according to the Technical committee. The Pierce Arrow came in second with 70.7 per cent., the Stoddard-Dayton and Corbin finishing in the order named. In this event the winning car is determined by figuring the piston displacement, weight of car, gear ratio, percentage of grade and the speed attained. The driver must use the same gear all the way, for changing means disqualification.

Porter hill, on which the climb was held, is an excellent place for such an event, and it is more than probable that the climb will be held there again next year. The cars get a flying start of about 200 feet before they strike the tape—then 200 more of level ground, followed by a more than a quarter of a mile of stiff incline averaging more than 16 per cent. At the end there is 500 feet of very slight grade, allowing an excellent finish.

Considering the steepness of the incline, the time by the Chadwick in the trial against time after the scheduled events—36 seconds—is nothing short of wonderful. In the free-for-all the car made it in 42 4-5 seconds, and sanction was then granted for another trial by the committee. Like a skyrocket the flying car appeared as it shot up the incline, bounding over the rough surface of the ground. The road was perfectly straight, and from the finish line one could watch the machine as it flashed up the hill. Haupt's driving was remarkable, and veteran racing men who were on the scene could not help but marvel at it.

Just before the climb, what the crowd took to be two novel competitors appeared on the scene, and there was almost a small riot, due to the curiosity of the spectators to see the machines. They were two of the farmer's buggy autos that the International Harvester Company is building at its Akron factory and were driven over from there by the testers to see the climb. To say that their appearance created a sensation is to put it mildly.

The complete summaries follow:

STOCK CARS, $850 AND UNDER.

1.	Ford	L. E. Manley	1:28 1-5

STOCK CARS AND RUNABOUTS, $850 TO $1,250.

1.	Overland	C. P. Brockway	1:17 3-5

STOCK TOURING CARS, $850 TO $1,250.

1.	Jackson	C. D. Paxson	1:52

STOCK RUNABOUTS AND TOURABOUTS, $1,250 TO $2,000.

1.	Jackson	C. D. Paxson	:55 2-5

STOCK RUNABOUTS AND TOURABOUTS, $2,001 TO $3,000.

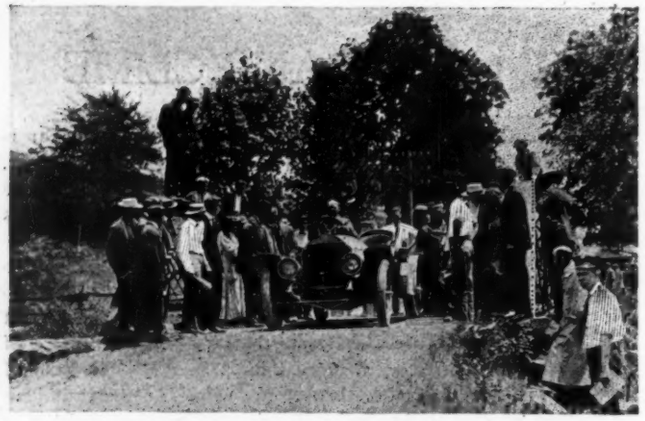
1.	Stoddard-Dayton	A. O. Miller	:50 2-5
2.	Knox	W. A. Bourke	:55 3-5
3.	Jackson	C. D. Paxson	:56 2-5
4.	Stoddard-Dayton	A. C. Miller	:59 1-5

STOCK TOURING CARS, $1,001 TO $3,000.

1.	Stoddard-Dayton	A. C. Miller	1:03 3-5
2.	Oldsmobile	Andrew Auble	1:52 1-5

AMATEUR CHAMPIONSHIP OF CUYAHOGA COUNTY.

1.	Stearns	Mrs. K. R. Otis	:54 3-5



Miller in Stoddard-Dayton Which Won Three Firsts.

ELECTRICS, $2,000 AND UNDER.

1.	Columbus	W. F. Piastine	1:15
2.	Baker	E. Gruenfeldt	1:33 4-5
3.	Babcock	F. S. Peck	1:34 2-5

ELECTRICS, $2,001 AND OVER.

1.	Baker	E. Gruenfeldt	1:00 3-5

SIX-CYLINDER STOCK CARS.

1.	Chadwick	W. Haupt	:41

STOCK CARS WEIGHING FROM 1,432 POUNDS TO 2,204.

1.	Stoddard-Dayton	A. C. Miller	:46 4-5
2.	Knox	W. A. Bourke	:51 1-5
3.	Jackson	C. D. Paxson	:53 2-5

STOCK CARS WEIGHING OVER 2,204 POUNDS.

1.	Chadwick	W. Haupt	:41 1-5

PISTON DISPLACEMENT HANDICAP FOR GASOLINE CARS.

1.	Knox	W. A. Bourke	77.5 per cent.
2.	Pierce	W. W. Partridge	70.7 " "
3.	Stoddard-Dayton	A. C. Miller	
4.	Corbin	J. M. Matson	

FREE-FOR-ALL.

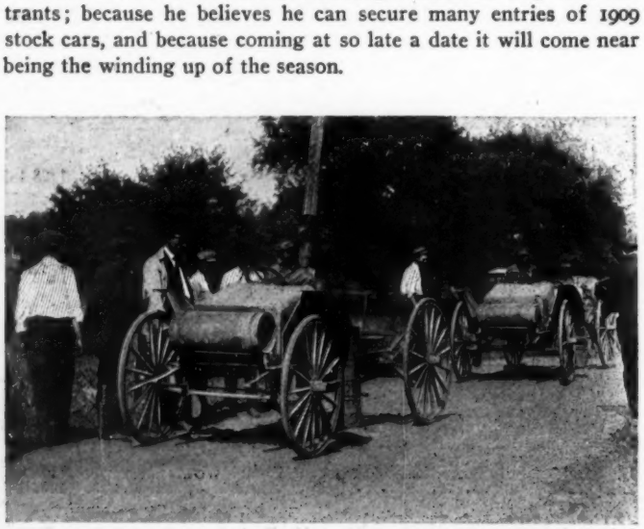
1.	Chadwick	W. Haupt	:42 4-5
2.	Stoddard-Dayton	A. C. Miller	:45 3-5
3.	Jackson	C. D. Paxson	:50 3-5
4.	Corbin	J. M. Matson	:50 4-5
5.	Knox	W. A. Bourke	:52 3-5

TRIALS FOR RECORD OF THE HILL.

1.	Chadwick	W. Haupt	:36

TO HOLD ANOTHER "DEAD HORSE" CLIMB.

WORCESTER, MASS., June 15.—J. P. Coughlin, president of the Worcester Automobile Club, announces that the club will conduct still another automobile climb on Dead Horse hill this year, the next time in October, because the one on June 6 was so great a financial success; because he believes he can bring more racing cars and noted drivers here, including Vanderbilt Cup race entrants; because he believes he can secure many entries of 1909 stock cars, and because coming at so late a date it will come near being the winding up of the season.



International Harvester Buggy Autos at Cleveland Climb.

MOTORCYCLISTS' NATIONAL MEET PROGRAM.

The program of the sixth annual meet of the Federation of American Motorcyclists, which will take place in New York, July 1 to 4, has been determined upon. It fairly bristles with pleasurable activities and is as follows:

Wednesday, July 1—8 a.m.—Runs to Grant's Tomb, Lafayette Boulevard and Fort George Hill; 12 m.—Sightseeing tour in "rubberneck" coaches; for out-of-town visitors only; 2 p.m.—Run around Central Park; 4 p.m.—Run to Hall of Fame and Van Cortlandt Park; 8 p.m.—Excursion to Coney Island.

Thursday, July 2—8 a.m.—Bath run to Coney Island, via cycle paths; or bath and exhibition of life-saving at Dalton's Battery Baths, New York City; 11 a.m.—Run to Roslyn, via Jericho road; 3 p.m.—Tilting tournament at Roslyn; 8 p.m.—"Smokefest" and high old time at Roslyn.

Friday, July 3—7 a.m.—Start of 50 miles economy contest from Roslyn; 1 p.m.—Chowder party and annual photograph at Sea Cliff, L. I.; 7:30 p.m.—F. A. M. annual business meeting and election in Terrace Garden Hall, New York City.

Saturday, July 4—10:30 a.m.—Trolley excursion to Paterson, N. J.; 2 p.m.—National championship race meet on Paterson Stadium.

The annual F. A. M. national endurance and reliability contest will serve as a curtain raiser on June 29 and 30. The first day's run will start at Catskill, N. Y., and terminate in New York City, a distance of 174 miles. The second day's run will be from New York to Riverhead, L. I., and return, 176 miles, making a total of 350 miles.

"AROUND THE WORLD" IN AUTOMOBILES.

MONTCLAIR, N. J., June 13.—An automobile tour of the world was promoted here to-day with great success for the joint benefit of three local charities. A grand central station was established, from which trips were made to various cities, personified by various residences appropriately equipped for the day as to the costumes of the ladies in waiting and decorations.

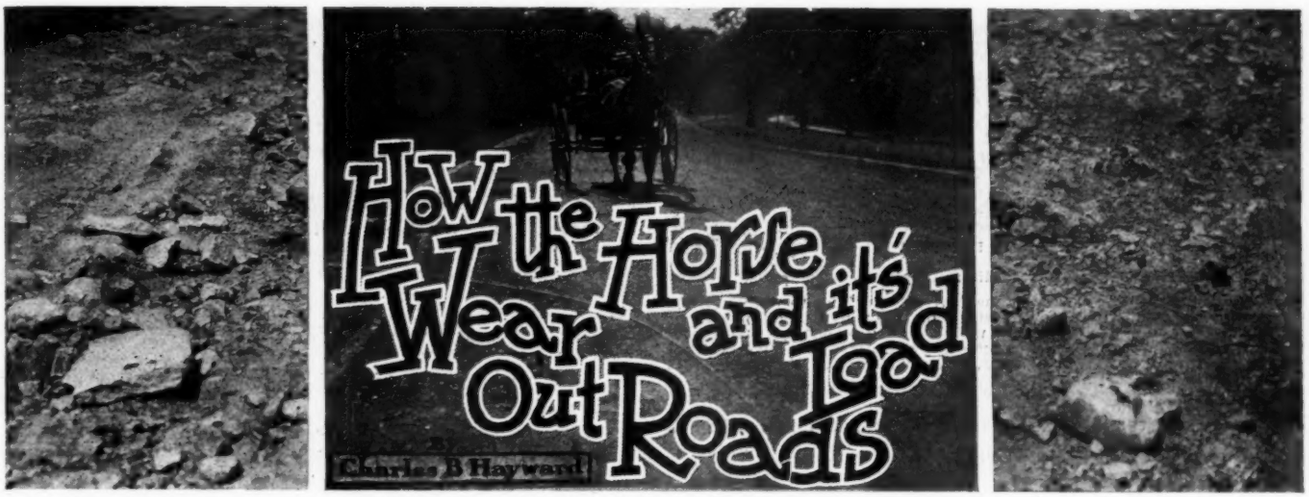
From the grand central station the travelers were conveyed to Pekin, the residence of William B. Dickson, on Llewellyn Road; Madrid, the residence of Albert French, on Upper Mountain avenue; Yokohama, the residence of William G. Frost, on Upper Mountain Avenue; Berlin, the residence of H. F. Holloway, Upper Mountain avenue, and Constantinople, residence of W. B. Millar, Park street. At Yokohama the guest of honor was Kokokichi Midzuno, the Japanese Consul-General at New York, and his wife and two children. At the city of Pekin there were a large number of native Chinese, picturesquely attired, and at the other cities the scene was effective by reason of the gay costumes and picturesque decorations.

TO OPEN WEMME CUP RACE TO THE WORLD.

PORTLAND, ORE., June 12.—It is now proposed to throw next year's race for the Wemme cup open to the world and make it an event that shall attract the cars not only of every section of this country but also of every automobile building nation. The fact that Portland can offer military protection and a course, over which local stock cars averaged better than Briarcliff and equaled Savannah times, is deemed a reasonable basis for the promotion next time of a more ambitious race. The contest of May 30 was confined strictly to cars nominated by local dealers. The next contest will be in every sense of the word a free-for-all. Its promoters plan to make of it a Pacific coast classic and even cherish the hope that the prospect that the Vanderbilt Cup race may be run over what many have pronounced the finest national automobile race course in the world is not impossible.

LOWELL'S FOURTH OF JULY RACE DOUBTFUL.

BOSTON, June 15.—The possibility of holding the proposed 250-mile race on the Merrimac valley course near the city of Lowell grows more doubtful as the Fourth of July, the date for the event, draws nearer. The Lowell Automobile Club has been refused the use of the State militia to guard the course and it is also up against the possibility of not being able to secure a permit to close the roads.



WHENEVER the hue and cry are raised against a thing, it is inevitable that the verdict of the unthinking mass will be "guilty," for those who follow a "blind lead" can see nothing else. Hence, only one side of a question is presented to view, and that in a most biased way. *Prima facie,* a good case can be made out for any cause, no matter how hopeless, provided its advocate be gifted with the necessary talent, and it is only when the defense is heard that the true state of affairs is brought to light. This is the case of the *Horse vs. the Automobile* in a nutshell, where the matter of road damage is concerned, though it is a case that is presented for public consideration solely as *The Automobile vs. the Road,* in the vast majority of instances, and the horse is not cited in any connection. Barrels of ink and miles of white paper have been consumed in raising the hue and cry against the automobile, on the score that it is a destroyer of the road, pure and simple. "Tax it to build new roads and keep the old ones in repair," cry the politicians and their constitutents. Then tax it some more.

It would be foolish to attempt to assert that the automobile does no damage whatever to the roads; quite as foolish as it is to utterly ignore the pounding of steel-shod hoofs and the drawing of heavy loads on narrow steel tires, as factors in the process of wearing out a road. If any course of reasoning be indulged in on the matter, it is doubtless the somewhat fallacious one that the holes dug by caulks and sharpened shoes, and the deep ruts caused by absurdly narrow tires for the weight carried constitute *legitimate wear and tear,* while that for which the automobile is responsible is *destruction.* This appears to be the commonly accepted view, and because the damage that the automobile does is far more in evidence owing to its novelty and the fact that it is emphasized on curves, the toll that the horse and his burden take from the stone-shod surface are lost to sight entirely. Let it be granted without a quibble that the automobile does do more or less damage to the road, both for the sake of argument and because it is actually a fact. To admit half the contentions of its detractors, however, would be to damn it forever, and if even 50 per cent. of these accusations were founded upon fact, it would be necessary to rebuild every much-traveled automobile road at least once in two years.

Considering the Question Impartially.

But if the matter be taken up and considered point by point in a logical and reasonable fashion, rather than in the senseless and prejudiced manner that has characterized the majority of accusations against the automobile up to the present, it will be evident long before all the testimony is in that an exceedingly strong case can be made out against the horse, and even the most biased observer will be forced to admit that the horse has hardly a leg to stand on when it comes to putting in an adequate defense to the various charges that can be brought against him on the score of road damage. The point that appears to be entirely lost sight of by the majority of those who are wont to accuse the automobile of tearing up roads by the roots is that a road, like everything else, is bound to wear out in time. From this the question arises, "Which wears it most?" When a study has been made of the nature of the damage caused by the horse and its load, it will be quite evident that, proportionate to his speed, the horse is more destructive of road surfaces than the auto.

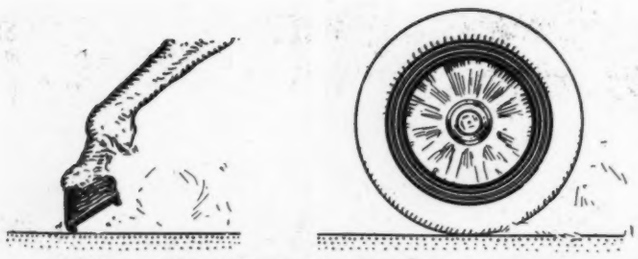
About Steel or Rubber Versus Stone.

That this must be apparent to even the untechnical observer, when the character of the wear which is imposed on the surface of the road by the two different forms of locomotion is taken into consideration, calls for no argument. In one case there is the pounding of steel-shod hoofs, impelled by a force amounting to many hundreds of foot-pounds per minute, as the average horse weighs in the neighborhood of three-quarters of a ton, and lifts his hoofs several inches from the ground, while, on the other, there is the smooth rolling of soft rubber. This is aptly illustrated by the sketch showing the action of the hind leg and hoof of a horse as compared with the rolling action of the wheel of an automobile.

It goes without saying that a rubber tool would never be selected to work stone with, yet the automobile tire has actually been accused of breaking the stone of the roadway, and in support of this it is pointed out that steel studs and rivets are employed on the treads and it is the presence of the harder material in this form that does the damage. This, of course, does not take into account the fact that these steel projections are backed by rubber or leather, and that when a blow is received by a complex structure, such as the canvas-rubber-leather-steel combination of the automobile tire, the softest materials will naturally yield first. The steel studs may be harder than the stone of the road, but they do not strike it a blow, merely exerting a constant rolling pressure, a smooth surface being assumed. When a slight obstruction is met, something must give, and that something is the tire, which, to a certain extent, "absorbs the obstacle," the steel rivets receding as their backing is compelled to give way, instead of being impelled forcibly against the stone by a blow. Take any "single track" roadway and note the very distinct trough that the horse has carved out for himself in the center of the road, and which he is so loath to abandon that unless actually kept to one side by constant attention on the part of the driver, he will automatically resume his plodding in the softer track that he has carved out for himself.

"Do Not Drive in the Ruts."

Not long ago this was a very familiar sign along improved roads in rural districts, and it constituted the chief expression that the desire for good roads assumed among many agricultural communities. It serves to bring to light the fact that the horse-drawn vehicle is really responsible for as much, if not more,



Methods of Road Destruction Graphically Compared.

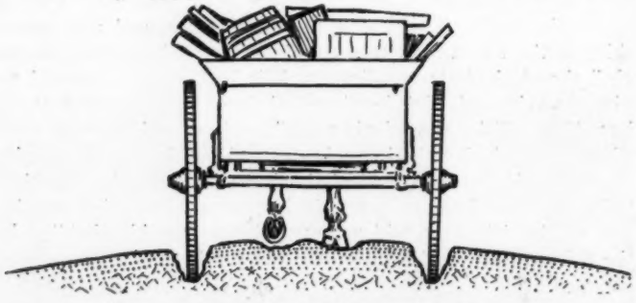
It requires no abstruse mathematical calculations to demonstrate that three-quarters of a ton, resting on four steel-shod points of comparatively small area, and which are alternately lifted and brought down in pairs, will do much more to disrupt a surface than the rolling action of four wheels, even where the tires are shod with steel rivets.

damage to the road surface than is the animal itself. Gauged by the foot rule, the central path gouged out by the four steel-shod hoofs approximately equals the sum of those made by the narrow steel-tired wheels, though the necessity of "turning out" tends to widen the wheel ruts more than it does the horse's path. The damage occasioned by the tire is much worse in reality, as the ruts are invariably deeper throughout their length than is the case with the series of holes that constitute the central strip that is pounded out between the track of the wagon.

The illustration showing the section of a road carrying a wagon and its motive power shows in a striking manner exactly the nature of the damage occasioned by the horse and its load. Nor have they been exaggerated in the least, as it would be quite possible to select examples that could not be exaggerated, so bad are they in their natural state. Residents of New York will recall the frightful state that upper Seventh avenue, extending north from Central Park, was continually in between 1890 and 1900. During the decade intervening between those years it was found necessary to relay an entirely new macadam pavement from foundation up, on an average of once every three years, while between the total renewals of the pavement there were frequent occasions for repairs calling for the employment of tons of crushed rock and fine gravel for the top dressing, all of which was applied in the most approved manner and thoroughly wet down and rolled before traffic was allowed upon it. But, with the exception of the short periods following upon the conclusion of such operations, the avenue, which has long been one of the city's chief driveways, was a disgrace to the municipality. During the years in question there were not enough automobiles on Seventh avenue to do more than arouse the curiosity of those who saw them, and no one ever thought of accusing the power-driven vehicle of being the cause of the numerous deep ruts and wallows that extended to each curb.

Rain Is the Chief Cause of Damage.

After all, it is the rain that actually does most of the damage, but it is the work of the horse and its load that opens up the opportunity for the falling water and the stagnant pools left behind to do their work, by sinking into and disintegrating the whole road structure. Steel hoofs and narrow steel tires loosen and scatter the top dressing and the water comes to wash it away, and in a very short time channels are formed in which the water runs one way or another, according to the gradient of the road. A continuation of the grinding process of the steel against the bottom of the ruts loosens more material and more is washed away, which serves to explain the rapid manner in which the ruts are deepened, so that in time they open communication with the foundation beneath, and then the rain has an opportunity to undermine the entire structure.



Nature of the Damage That Narrow Tires Do.

This sketch depicts a cross-sectional elevation of a road and serves to illustrate the nature of the damage done by both the horse and its load. A common dirt road has been selected for the purpose of the illustration, owing to the far greater depth of the ruts usually encountered. The damage done by the horse's hoofs is proportionately greater than would appear from the sketch, as owing to the dirt lying in the hollows, it does not show as plainly.

Long before anyone ever thought of such a thing as an automobile ruining the roads men who knew what they were talking about, preached the doctrine of wide tires, and many attempts were made to pass legislation providing for the compulsory adoption of tires of a width calculated to bear the load the wagon was designed to carry. But most of these attempts were good efforts wasted, the legislation could not be passed, in the majority of instances, and the wagon user could not be brought to see that the innovation was entirely for his own benefit, in that a very much heavier load can be drawn over the same road with the same power where a wide tire is used, and the tire acts as a road maker, rather than a road destroyer.

Result of Hoof-pounding on Park Macadam.

The difficulty of attempting to illustrate such damage by means of photographs will be apparent from this picture, as the hole itself varied from one to three inches deep, though all appears to be practically one level. The depth of the part in the background may be gauged to a certain extent by noting the shadow of the shoe cast downward in the hole.

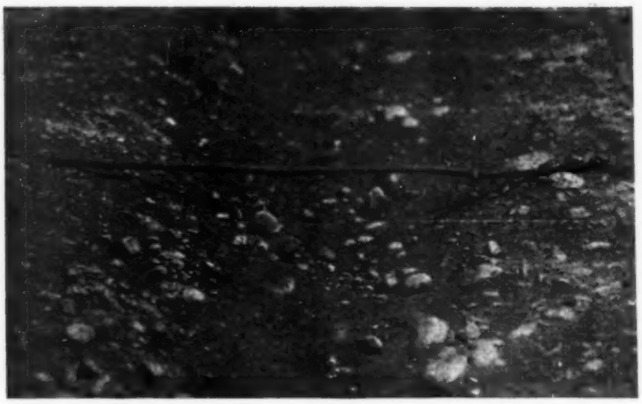
As a matter of fact, there has been more blind prejudice to contend against where it has been a question of spending money for road improvement than has been the case where almost any other public improvement that could be mentioned has been at issue. And it is this feeling, heightened by the belief that the automobile is purely a rich man's plaything, that has been extended against the power-driven vehicle where its effect on the roads is concerned. Few have ever stopped to analyze the character of the damage caused by an automobile, nor, for that matter, have they ever stopped to give either side of the question a thought; they have simply joined in the hue and cry because it seemed to be the popular thing to do to decry the automobile and all its works.

More Counts in the Indictment.

A little study of the question serves to show that, whether walking, running or standing, the horse and its load never tend to improve the surface of the highway, but the wear is constant under any of these conditions, and not a few of the worst holes in the road surface are made by the horse, at the expense of his feelings while he is standing still, for it is then that he is under the greatest necessity of pounding, to relieve himself of the flies. The most rabid can scarcely urge any argument against the auto as a road destroyer while it is standing against the

Water Shows Up Road Damage in Its True Light.

Many macadam roads appear to be in excellent condition when viewed in a perfectly dry state, but a few pails of water thrown on the surface immediately brings out the ruts and depressions and strikingly reveals their depth.



Enlarged View of a Narrow Rut in a Stone Road.

Apparently this rut is very wide and shallow, but in reality it was scarcely more than two inches wide at the bottom, showing unmistakably the work of the narrow iron tire, as it was not wide enough for an auto tire to "bottom" in.

curb. Here, at least, even those who are totally blind to hoof-marked holes and deep but narrow ruts, of which the automobile could not by any stretch of the most perfervid imagination be put down as the author of, must concede that the automobile is absolutely harmless.

Again, take the case of the automobile as it starts off, and as it is running at its average normal speed of 15 to 25 miles an hour, and the man who does not let his prejudice carry him away must admit that the automobile, with its broad rubber tires, not only does no damage to the road, but is actually a *road improver*. To those who regard this as a claim which goes beyond the legitimate, it is easy to make the following test, which cannot fail to convince the most skeptical. There are so many evidences of horse and wagon damage on the surface of any well-traveled road that the passage of any individual outfit leaves no perceptible trace, so completely does its imprint blend and become confused with the many that have preceded it. But if a stretch of a hundred yards or so be selected, and covered with a one or two-inch layer of fresh sand or earth, a fresh page will have been created upon which some striking records can be made.

Letting the Horse Incriminate Himself.

Have a horse and buggy, a delivery wagon or any of the other standard types of horse-drawn vehicles in daily use, driven over this stretch at a walk or trot, it does not matter much which, as the damage will not vary much in either case. The result will be a series of clean-cut depressions marking the passage of the wagon wheels by ruts which reach through to the hard surface beneath, and of holes which do likewise wherever the horses' hoofs have been planted. By driving the outfit first in one direction and then returning in the opposite direction over the same stretch, it will be at once apparent how greatly the latter operation increases the damage, as the horses' hoof-prints just overlap in such a manner that the holes originally made are approximately doubled in size.

To realize the extent of the damage thus created, for the marks in the soft surface prepared in this manner are merely duplications on a larger scale of what occurs to every road when a horse-drawn load passes over it, natural conditions must be copied still further. After the horses and wagon have passed over the prepared stretch once in each direction, a garden hose with a sprinkler attachment on it should be turned on the road, to simulate rain. A few minutes' wetting will cause every one of the depressions to fill up with water and it will be noted that the streams which form in the ruts thus created tend to carry off the top dressing of the road with them. In slightly magnified form, for purposes of demonstration, this is nothing more or less than what is constantly taking place on every road, and it is damage for which nothing but the horse and its load are purely responsible.

Repeat the Experiments with the Auto.

To provide the most striking contrast possible of the effect of the passage of a horse and wagon and of an automobile, have the prepared stretch returned to its original condition by raking out all evidences of the former's passage. Then have the automobile make its mark in the same unmistakable manner in which the horse has been compelled to accuse himself. But not at the

Striking Illustration of Damage Done by Horses and Narrow Tires on a New York Driveway.

Narrow Ruts, Three Inches Deep, in Macadam.

To better bring out the depth of these narrow ruts, twigs have been placed across them, but even this expedient fails to show them up in their true state by the aid of the camera, which does not lend itself well to this purpose.

gingerly pace of which he is capable; let the car be driven over the loose sand or earth at a speed of 20 to 25 miles an hour—five times faster than the average horse covers the ground, and note the result. In place of a series of holes and ruts two inches deep by two inches wide, assuming the loose dressing to be two inches of sand, there are a pair of broad, flat ribbons in which the material has been *compressed,* instead of being piled up at the sides of lines marked by the passage of the wheels. In other words, the automobile *does not create a rut,* but where there are narrow ruts it tends to fill them and flatten them out, thus acting as a road improver. This may be demonstrated by running the automobile over the prepared stretch before the marks of the horse's damage have been wiped out, and it will be found that the newly created ruts have been practically obliterated. But, to return to the tests as originally planned, it will be found that by driving the automobile backward and forward over the prepared stretch at speeds not exceeding 30 miles an hour, that the effect is really *to improve* the surface, the sand or earth being flattened out and compressed much the same as it is when a steam roller is run over it, except on a smaller scale. Applying the water test, as previously described, does not bring to light any such opportunity for the rain to wash away the surface dressing of the road, as is the case where a horse and wagon have passed over, as there are neither holes nor deep, narrow ruts in evidence, consequently there are no rivulets to wash their banks away in progressing downward, in accordance with the speed given them by the degree of the grade, nor any depressions to create puddles which seep through and undermine foundations. Few more conclusive or more convincing tests could be made than this.

Damage That the Automobile Does.

How is it, then, may well be asked, that the automobile is accused of doing such a great deal of damage, even by men who are not wholly given to exaggerating things, nor are wholly prejudiced against it? As already made note of, it would be childish to go on record as stating that the automobile is wholly free from guilt in the matter of wearing out the roads. It does its share, but that share is far less than that of the horse under any circumstances. By employing tires shod with non-skid bands, chains or similar traction-giving devices, in the foregoing experiments it would be found that the impressions left would not be so smooth; instead of the plain compressed strip there would be the marks of the projections adorning the tires, and the continued passage of such tires over the same strip would not compress it as effectively as where smooth tires were used, but even at speeds up to 25 or 30 miles an hour the effect could not be compared for a moment with that occasioned by the passage of the horse and wagon.

Showing Central and Side Ruts in a Road.

As well as a photograph can do it, this shows the typical form of damage illustrated by the previous cross-sectional sketch, with the exception that this is a macadam and not a dirt road.

By increasing the speed of the car to 40 miles an hour and over, it would become apparent that the rapid passage of the rubber over the surface created a certain amount of suction that caused some of the finer particles of the dressing to be lifted bodily and these will be seen following the wheel for a few inches as it rolls along. In a lesser degree, the same thing happens when an automobile is driven over a macadam road, but it is necessary to run the car at speeds of from 40 to 60 miles an hour in order to make the effect apparent. Examination of a road surface that has been treated in this manner shows it to have a bare appearance, the finer pebbles and filling material having been removed as if with a broom. But in no case is the surface broken into or cut through in the manner invariably caused by horse traffic, as revealed by narrow ruts and hoof holes that cover a very large part of the surface.

Auto Damage May Be Readily Prevented.

The crucial test of the horse's vastly greater powers of road damage is to be found in the fact that this sweeping of the fine material out of the interstices of the top dressing of stone by the automobile when running at high speeds does not occur where any binding material, such as tar and oil, has been employed, but horse hoofs and narrow steel tires cut through a road surface regardless of the nature of its construction. As compared with this, the greatest damage occasioned by the automobile is to be attributed to the practice of taking curves at high speeds. Holes and ruts are no worse on curves than straight stretches, merely because a horse and wagon do not travel around a curve at any speed, but the automobile does, and because of the lack of banking necessary to permit this without damage the car slides laterally in making the curve, and tends to pile up the loose material thus created, at the outer edge.

It is unfortunate that there have not been more numerous opportunities of actually comparing the damage done by horses and wagons and by automobiles on roads of similar nature, but, so far as known, the only case where this has been possible has been on the *Champs-Elyseés,* Paris. This is a broad avenue divided into three roadways, the central one of which is exclusively for automobiles, while the outer ones are for horse traffic. The experience of a year has shown that a very much higher rate of speed is maintained in the automobile section, yet accidents have been much rarer than on the horse drives. Where the state of the wood pavement itself is concerned, the only result of a year's use by the automobile has been a gradual change in color from the original brown to a black, caused by the oil and gases, while the horse drives *have sunk irregularly and have become pitted in thousands of places all over their entire surface,* as the result of the pounding of steel-shod hoofs. The pavement in question was newly laid at the opening of the year covered by the record in question, so that it would not be possible to have had better conditions to make a comparative test, as from the time it was first put down until it was examined at the end of the twelvemonth, no horses were allowed on the automobile driveway in the center, and cars were absolutely forbidden the side drives. To-day, the central drive is in far better condition than it was at the outset, as it has been compacted and compressed all over, while the horse drives are ready for expensive repairs.

SOCIETY OF AUTOMOBILE ENGINEERS TO MEET AT DETROIT

WHAT is generally conceded to be the center of automobile manufacture in the United States has been selected as the city for the Third Annual Summer meeting of the Society of Automobile Engineers, namely, Detroit. The summer meeting this year is to be held at the same time as that of the American Society of Mechanical Engineers, both organizations making their headquarters at the Hotel Cadillac, and there will be a mutual exchange of courtesies between the two societies. As a matter of fact, not a few of the visiting engineers are identified with both. The meeting of the A. S. M. E. will open Tuesday, June 23, while the automobile engineers will not convene until Thursday of the same week, the meeting lasting three days.

The Detroit entertainment committee, of which H. E. Coffin, of the E. R. Thomas Detroit Company, is chairman, assisted by Henry Ford, Russell Huff, James H. Herron and Alanson P. Brush, has prepared an attractive program to enliven the stay of the engineers. Thursday morning both organizations will go aboard a special steamer and will be carried up the river to witness the launching of a 10,000-ton lake freighter. In the afternoon one of the local plants will be visited and inspected, and in the evening papers will be read on "Autogenous Welding and Its Application to Automobile Construction," by E. S. Foljambe, and "The Storage Battery in Automobile Work," by Bruce Ford, the former being accompanied by demonstrations of the various processes employed in welding and cutting metals with the aid of the oxy-acetylene burner. Marvelous results are obtainable with this process, and it is expected that the presentation of this paper will bring out a very interesting discussion. Mr. Ford is an authority on the storage battery and the discussion of his paper is also expected to bring out numerous points of interest.

During the morning of the next day—Friday—the automobile engineers will participate in the discussion of the paper by Henry Souther on "Clutches," which was presented before the American Society of Mechanical Engineers at its New York headquarters, May 12 last, and which has already been published in full in THE AUTOMOBILE. Duding Friday afternoon, the S. A. E. members will participate in a river excursion at the invitation of the mechanical engineers. The steamer *Britannia* will leave the Detroit, Belle Isle and Windsor ferry dock at the foot of Woodward avenue at 3 P.M., sail round Belle Isle, thence down the river to Amherstburg and to the head of Lake Erie, returning to Bois Blanc island, where supper will be served, returning to Detroit later in the evening.

"Some Recent Developments in Magneto Ignition," by Otto Heins, is the paper scheduled to be read Friday evening, and in connection therewith Mr. Heins will show a large number of lantern slides, illustrating the development of ignition during the past 20 years or more. Saturday morning will be devoted to a visit of inspection to one of Detroit's chief industrial show places —the plant of the Packard Motor Car Company—after which the members will be taken to the Detroit Boat Club, where lunch will be served at the invitation of J. G. Rumney, of the Detroit Steel Products Company. Following this there will be an automobile run through Belle Isle Park and environs, of which Detroit is justly proud. In the evening, papers by Frank Beemer, on "The Unit System of Power Transmission in Automobiles," and by A. L. Dixon, on the "Increased Efficiency of Single Motor Drive," will be read and discussed. It is anticipated that Cleveland will be suggested as the place for the fall meeting, to be held in September or October.

INCREASING THE POWER BY CONCENTRATING THE CHARGE

By J. H. K. McCOLLUM.

TO be able to increase the output of a gasoline motor by 110 per cent., without paying more for the improvement in capacity of the motor than the latter is worth must be conceded as something worthy of more than passing mention. But this has been done with the aid of an attachment of which the writer is one of the patentees, and it is the purpose here to describe it and show its workings. First, as to the latter and the manner in which the results were obtained. In our laboratory in Toronto, we have a standard Fairbanks-Morse four-cycle gasoline engine, equipped with this attachment. We have tested this engine on the brake in every possible way (varying the tension of the inlet valve spring and the valve opening, varying the time of the spark, etc., etc.), and noted carefully the power developed by the engine in its original form.

Now, from exhaustive tests, with our attachment in use, we find that we have obtained as high as 110 per cent. more power at the same speed, using extra gasoline or gas in almost exact proportion to the extra power obtained. The attachment was applied as follows:

A hole was bored through the side of the cylinder through the water jacket and cylinder walls at a point where the hole would be just uncovered by the top of the piston when the latter was at the lowest point of its downward stroke. The engine is an upright. We tapped this hole with a tapered tap and screwed into it a tapered nipple cut in the lathe, and to this nipple fastened a valve casing and poppet valve operated from the secondary shaft, the valve in this case opening away from the engine, being timed to open during the suction stroke only and close during the compression stroke only, remaining closed during the remainder of the cycle. A pipe connecting this valve casing to the outlet valve chamber of a small compressor is used. The compressor is fitted with automatic valves and is run from the main shaft of the engine. It is better to use a separate carbureter for the compressor.

With this system the engine is allowed to draw in the full ordinary charge of mixture as usual, but when this ordinary charge is all in we force in another charge of mixture which is added to the ordinary charge, and thus we have a pressure of mixture in the cylinder above the pressure of the atmosphere before the piston commences to rise on the compression stroke.

The whole secret of the success of this system is in the conjunctive action of this two-to-one valve and the piston of the engine. This valve is driven by an easy, slow action, noiseless cam and a fairly large roller, and, although the valve opens about when the first half of the suction stroke is completed, or when the piston is only about half way down on its suction stroke, the extra charge does not go into the cylinder until the top of the piston uncovers the said hole or port bored through the side of the cylinder, but the moment the piston commences to rise its edge covers and closes the port and entraps the ordinary and extra charges combined, and when the piston has finished about half of the compression stroke the two-to-one valve closes and remains closed until the next suction stroke is about half completed.

In a four-cylinder, 4-inch by 6-inch engine a fifth crank is used, driving a double-acting compressor, having a 5-inch bore and 6-inch stroke. This compressor cylinder is very little higher than the engine cylinder, on account of the narrowness of its piston, and of about the same outer diameter. With a combination of this kind, the power of the engine is practically doubled.

The best arrangement is to have a throttle valve between the compressor inlet valves and its carbureter, and allow the com-

pressor to run all the time, although, if desired, the compressor can be gear and clutch-driven, so that when not in use the engine can be run without running the compressor. When not using the extra or forced charge, the throttle valve is closed and the compressor piston acts similarly to the vacuum dash pot of a Corliss engine, the only extra work the engine has to do being to overcome the friction of the compressor, and we find this so small, especially where four or more cylinders are used, as to be practically negligible.

When the compressor throttle is closed and the engine running only on the ordinary charge, the compression is about 50 or 60 pounds, this giving an easy running, long life engine, but when the compressor throttle is opened and the extra charge added to the ordinary charge, the compression can be put up to any pressure desired, according to the bore and stroke of the compressor, and the amount of opening of the compressor throttle, until the point of preignition is reached, it even being possible, where an even speed can be obtained, to run the engine with the charge being thus fired by its own compression.

The power obtained by this higher compression, and, consequently, higher explosion pressure, from the use of the extra charge, we find, by actual demonstration and careful tests, to be a different matter entirely from the power obtained by raising the compression of the ordinary charge without the extra charge by a diminished or decreased clearance. This system also allows of the engine running half power on a wide-open throttle, thus giving greater efficiency. With the ordinary engine in automobile, motor boat and other uses at all times except when running developing full power, the engine is running with the compression below the maximum that can be obtained, as is well known, so an engine working under our system will evidently have a greater advantage in higher compressions at lower powers and will only use an amount of fuel proportionate to the actual power output.

SOME VARIATIONS IN TIMING SHOWN BY FOREIGN MOTORS

By C. F. REDDEN, of the Studebaker Bros. Company of New York.

THERE has been recently published a table which gives the valve timing on many of the best known foreign cars, and it is interesting to note the variations in timing used by several of the more prominent foreign manufacturers. At the first glance it might appear that the valves of an internal combustion motor should open at dead centers for the induction and exhaust strokes, and should remain entirely closed during the compression and power stroke. This, however, is not the case, owing partly to the inertia of gases at high speeds, and also partly to the time taken for the complete combustion of even a perfect mixture; the advance of exhaust opening variations from 30 degrees, which is a minimum, to 58 degrees which is a maximum.

The consensus of opinion among foreign manufacturers, is to close the exhaust valve exactly on dead center. Some few manufacturers let the closing of the exhaust lag 5, 10, and even in some cases 28 degrees. The object of this exhaust valve timing is to rid the cylinders as completely as possible from the product of combustion by opening the exhaust valve about 40 degrees early, and holding it over about 10 degrees late. The inlet valve opens anywhere from 1 to 20 degrees after the exhaust valve closes. The best practice, however, seems to favor opening the inlet valve immediately after the exhaust valve has become seated, say from one to three degrees on the flywheel. The closing of the inlet valve invariably shows some lag, in one case this lag ran as high as 58 degrees while the average is about 20 to 25 degrees.

Many autoists do not understand why it is not desirable to close the inlet valve directly on dead center, they arguing that by allowing the valve to lag, a certain amount of mixture will be forced out. While this seems a logical argument, it is nevertheless a fact that the incoming gases do not follow directly upon the piston, but a vacuum, so to speak, exists between the piston head and the incoming charge. Theoretically, the right time to close the valve is at the moment of the meeting of the piston to the incoming charge. The problem of correct valve timing is one that holds a good deal of interest, because the variable engine is such an important factor.

If a motor always ran at constant speed, only a very little experimenting would be necessary to determine the proper valve setting to give the maximum power at that particular speed, but the wide limits between which the gasoline motor must operate makes it necessary to strike an average in setting the valves that will give the best power for all-around service. Probably the averages as set forth above are pretty nearly correct, at least they show what has been considered good practice abroad, and form practically the first data published on the subject.

HOW MAXIM FOOLED THE OXEN OWNER.

HARTFORD, CONN., June 15.—H. P. Maxim, the designer of the Maxim-Goodridge electric, had a peculiar experience while returning to Hartford from New London the other afternoon. On the shore road between Lyme Ferry and Niantic is a steep hill. At the bottom of this hill sits a farmer and a yoke of oxen, ostensibly to assist those in trouble. Now, then, half way up that hill there has been dumped a lot of soft loam and turf into which the wheels of a car will sink. Chain grips are useless, likewise any other such contrivance. The ruralite at the bottom of the hill is Johnny-on-the-spot and captures a little loose change. But the inventor of the noiseless gun went him one better. The car was unloaded of its passengers who walked up the hill. All turned to and cut a lot of brush and bough and these were placed over the bad spots. Then, as the car had an abundance of power, the ascent was made without the aid of those oxen, and the farmer who tried to make it appear that the dumping of the loam and turf on the road had been done to repair the highway lost a tip, and well he might.

The attorney of the Automobile Club of Hartford has been notified and will see to it that this bad spot is repaired at once and that local talent lets it alone in future.

PRESSURE LIMITED BY ATTACHMENT MEANS.

It is a more or less general opinion that there is danger of inflating a tire too hard, and many autoists believe in this to the extent of damaging the tire equipment of their cars by not inflating the tires hard enough. In order to ascertain the truth of the matter definitely, the Pennsylvania Rubber Company, Jeanette, Pa., had its testing department make an investigation. A tire was mounted on a regulation clincher rim, and subjected to a constantly increasing pressure until the gauge showed 600 pounds to the square inch. At this point, a slight expansion of the walls of the shoe was apparent and they were so hard that they sounded like wood upon being struck.

Just after passing the pressure in question, the bead was blown out of the rim for a distance of about 9 inches, showing that a well-constructed pneumatic tire will stand a pressure great enough to blow it off the rim before bursting, thus branding as a fallacy the belief that blowing the tires too hard will be apt to cause a blowout. Apart from the stretching of the walls, no damage was apparent and there was no rupture of the fabric. The Pennsylvania Rubber Company will continue to experiment and expects to find some means of holding a tire down sufficiently fast to determine at what pressure the shoe will burst.

LETTERS INTERESTING AND INSTRUCTIVE

DETECTING FAULTS IN A SECOND-HAND CAR.

Editor THE AUTOMOBILE:

[1,417.]—Will you please answer the following questions in "Letters Interesting and Instructive": (1) How to test for faults when buying a second-hand automobile. (2) How to find the primary terminals of a coil that is not marked. (3) Why is it necessary to have the secondary circuit complete when the primary is closed? (4) How is the spark retarded and advanced on the Renault car? ROBERT BURTON.

Tarrytown, N. Y.

(1) Your first question would involve a rather lengthy reply, so we would refer you to Letter No. 1,170, which appeared on page 247 of THE AUTOMOBILE of February 20, 1908, in the answer to which the subject is gone into to the extent of almost two columns. (2) Take a set of several dry cells connected in series—the usual manner in which they are employed on a car—and attach one terminal to a binding post of the coil. Take the other wire in the hand and wipe its bare end across the other terminals of the coil, one at a time. If there is no visible effect, change the first wire to some other terminal and again proceed as before. If the battery is connected to the primary, making the circuit in this manner will cause quite a visible spark and a snap, whereas if only the secondary coil happens to be in the circuit there will be nothing seen, as the low voltage of the battery is not sufficient to overcome the high resistance of the secondary winding. Nor will there be any effect where one wire is connected to a primary terminal and the other to the secondary. The method may be varied by using a common electric bell or buzzer in the circuit, in which case it will sound when the primary is completed through it, and it will not ring through the secondary. (3) In order to prevent the secondary coil from being burned out. Every time a current is sent through the primary and the circuit suddenly broken, a corresponding current of extremely high voltage is immediately induced in the secondary. If the gap between the terminals of the secondary winding be so great that the coil cannot bridge the distance, the current will find the path of least resistance. On this account the resistance of the air-gap that a coil of a certain size will bridge is calculated to be less than that of the resistance of the insulation between its windings and where the former is allowed to greatly exceed the latter the insulation is broken down. Many makers put what is termed a "safety gap" on their coils, the resistance of this opening being the maximum that the coil will safely bridge, so that if the terminals are moved too far apart the spark jumps at the safety gap. (4) The Renault car is designed to run on a fixed point of ignition, no provision being made for advancing the spark in the ordinary manner. A magneto is employed and provision made for retarding the time of ignition sufficient to facilitate starting.

MORE ABOUT CUTTING A CRANKSHAFT DOWN.

Editor THE AUTOMOBILE:

[1,418.]—In your answer to inquiry No. 1,401 the statement that reducing the crankshaft diameter from 2 inches to 1 1-2 inches amounts to a reduction of 25 per cent. in strength, is slightly inaccurate. The torsional strength of a solid, circular shaft is proportional to the cube of the diameter. The 1 1-2-inch shaft would, therefore, have only about 42 per cent. of the power-transmitting capacity of the 2-inch shaft. H. H. F.

Galion, O.

If the statement in question had been made in the way you put it, there could be no doubt as to its lack of accuracy, but if you will read it again we think it will be plain that the 25 per cent. reduction spoken of referred to the amount of the reduction and not to the strength. However, we wish to thank you for calling attention to this important factor, which should be further cause for the inquirer in question abandoning the project of cutting down his crankshaft in the manner contemplated.

WORN VALVE STEMS MAY BE THE CAUSE.

Editor THE AUTOMOBILE:

[1,419.]—I have a two-cylinder Reo car which has lately shown a tendency to overheat, boiling the water, even after a very short run. I cannot discover any cause for it. The mixture seems to be about right. I judge this from the fact that the engine develops apparently full power and runs well. The pump is in good shape; no pipes are clogged. The lubricator is not feeding an excess of oil, neither is there an excess of oil in the crankcase. The valves are absolutely correct in accordance with the marks on flywheel, both the inlet and the exhaust. There is no carbon deposit in either cylinder, the cylinders being quite clean. Heretofore I have never noticed any such trouble with this car. I shall be pleased to receive any information that you or your subscribers may be able to give me as to the probable cause of this overheating, which as yet I have been unable to discover.

I would also like to be advised as to the horsepower of a 4 1-4 by 4 1-2-inch motor with offset cylinders, and running at an average speed. What would be the rating of such a motor under the formula used by the A. L. A. M.?

Columbia, S. C. A. M. GIBBES.

Wear of the cams, tappets and valve stems may be the cause of the overheating you complain of, as it would not require much loss from the faces of the various moving parts that come in contact to cause a more or less appreciable difference in the operation of the valves, and as this wear tends to bring about a later action, it may be sufficient in the case of the exhaust valve to retain the burnt charge considerably beyond the time at which it should be allowed to escape. Where a motor runs at a speed of 800 r.p.m. or over, it will be evident that it is a matter of very small fractions of a second. Or, as called attention to by another correspondent recently, the cause may be due to the deposit of a fine film of scale on the inside of the circulating pipes and radiator. This scale is of a mineral nature, and, in addition to being an excellent nonconductor of heat, it is deposited in such intimate contact with the metal that the latter is practically insulated and its radiating power entirely lost and the cooling system is very inefficient.

Assuming a piston speed of 1,000 feet per minute, the output of this motor would be 28.89 horsepower, according to the A. L. A. M. formula.

INDICATIONS OF A GENERAL OVERHAULING.

Editor THE AUTOMOBILE:

[1,420.]—I recently purchased a second-hand two-cylinder Model N Ford automobile. Have had considerable trouble with it, and as a subscriber am writing for your opinion as to the cause of the trouble. The batteries are new and the vibrators also, all perfect. Only one cylinder fires regularly, although I get a good spark from both plugs. The engine will not speed up unless the spark is very high. Opening the throttle has no effect until wide open, then the engine will speed up a little. When I advance the spark very high, the engine will speed up considerably. When the engine is running at high speed there is a popping noise in the exhaust, but if I shut off the gasoline in the carbureter, or feed more, the engine dies down. At times the water boils when I have only run the car a few minutes. H. F. WHITTLESEY.

Cranmoor, Wis.

We should say the motor was in need of a general overhauling, as is usually the case with a car acquired at second hand, and the most effective way to do this is to take it all down, clean out the crankcase, cylinders, valve pockets and the like, adjust the bearings and replace any parts that seem to be badly worn. Clean the timer and carbureter out thoroughly and after reassembling the motor see that it is timed properly. If there are any markings on the periphery of the flywheel, follow these, but if not the inlet valve, taking the forward cylinder to work on, should be set to open at the upper dead center and should remain open until the piston has started upward on the compression stroke, the equivalent of 15 to 20 degrees on the flywheel circle. The exhaust valve should open 30 to 35 degrees in advance of the lower dead center of the power stroke, again measuring on the flywheel

circle, and should remain open until the upper dead center on the exhaust stroke has been reached. The timer should be set so that the contact of the cylinder in question corresponds to the upper dead center of the piston. The spark advance lever should then be about one-third way from the end of its travel on the sector, *i.e.* one-third way from the bottom, assuming that the lever moves upward to advance. This will then give two-thirds of its travel for advancing the timing of the spark and one-third for retarding its occurrence. As the cams are fastened to the camshaft, or are integral with it, and the timer is designed to run synchronously with the motor, timing one cylinder suffices for both. To adjust the carbureter open the needle valve sufficiently to enable the motor to be started; then close it very slowly until a point is reached where the motor does not get sufficient fuel to run regularly. Reopen it slightly until the motor again runs without missing and fasten the needle valve in place at that point. Try the motor at various speeds on the throttle and see if it responds properly. If not, see that the auxiliary air valve is in good working order. With a good overhauling of this kind and proper timing, the motor should run as well as it ever did.

QUERIES CONCERNING THE TWO CYCLE.

Editor THE AUTOMOBILE:

[1,421.]—I would like to ask a few questions concerning the working of a two-cycle engine for automobile use: (a) What percentage greater consumption of gasoline has the two-cycle over the four-cycle, both motors having the same size cylinders? (b) What is the first fault to be found in the two-cycle motor after a few thousand miles' run? (c) What is the crankcase compression of a two-cycle engine? (d) Is the crankcase ever known to leak after a few months' use? T. C.

Putnam, Conn.

(a) We think the two-cycle motor requires about 10 per cent. more fuel than one of the four-cycle type of the same size, but have never had any personal experience with a two-cycle motor under the varying and trying conditions of automobile service and so cannot make any definite comparison between the two, nor do we know that the above holds good. According to a well-known maker of marine and stationary motors of both types, the two-cycle, when running for long stretches under steady load, requires fully 33 1-3 per cent. more fuel than the four-cycle of the same size, but economy test records of two-cycle automobiles would not appear to substantiate this in the latter case. (b) We presume crankcase leakage would be the first trouble to develop. (c) The compression is usually three to five pounds per square inch, but in certain makes runs as high as eight pounds to the square inch. (d) Not where the joint is properly made in the first place and the motor is not abused.

ABOUT REPAIRING RADIATOR LEAKS.

Editor THE AUTOMOBILE:

[1,422.]—In your issue of May 14, in re leaks in a honeycomb radiator, you say "there is no way of repairing by simply injecting something into the water," and, in general, you are correct, but if it is a very small leak—a drop or two at a time—a handful of flour put in with cold water and when the radiator is cold, will effectually cure the trouble. H. W. BARTOL.

Chateau de Ste. Helene, Nice, France.

In stating that there was no way of repairing a radiator merely by putting something into the water, we meant to infer that there was no practical way, as inquiries to this department are seldom intended to bring forth information concerning repairs of a temporary nature. A handful of bran will effect a temporary repair on the road, but anyone who has ever tried the expedient is never anxious for a repetition of the experience, as the bran becomes entrained in various parts of the circulating system and causes endless annoyance. Flour may serve to stop very small leaks, as you say, but where the leak is occasioned by a weak spot the use of such a remedy is merely putting off the evil day, as the vibration and jolting will extend the damage and sooner or later the flour will drop out and then the orifice will be much larger than it was originally and will no longer be susceptible to repairs of this kind. At best, the latter are only makeshifts, and while they are well worth while knowing for emergency use, where it is a question of bringing a car in, they are certainly not to be recommended for every-day use where a permanent repair is desired.

DOUBTLESS THE BEARINGS ARE AT FAULT.

Editor THE AUTOMOBILE:

[1,423.]—Will you please give me your opinion of a two-cylinder opposed engine and why it will knock when you advance the spark, and also knock when you put on more power, and as you advance the power it will even lose its speed on level ground when on high gear? When car is running on low gear it runs smooth and don't seem to bother at all. Ignition is good, use storage battery and Heinze coil and Schebler carbureter, Rajah spark plugs. Will you please suggest something to do so that I can overcome my engine from knocking?

Minneapolis, Minn. ANXIOUS SUBSCRIBER.

Your statement of the case would appear to indicate that the engine is in more or less need of a general overhauling. The bearings must have too much play, which would account for some of the knocking, particularly that which occurs when the load on the motor is increased. A motor will usually run smoothly on low gear and when not loaded, even though its bearings be loose, but the extra strain never fails to make this apparent. Advancing the spark too much will always cause a knock, as the explosion then occurs slightly before the piston has reached the upper dead center, and it has to work against the pressure thus set up. The knock followed by the opening of the throttle may be occasioned by poor carbureter adjustment, the mixture being either too weak or too rich, one or the other of these conditions always causing it to burn so slowly that the exhaust is not effected in time to relieve the cylinder of all pressure before the valve closes.

MAKE-AND-BREAK IGNITION WITH BATTERIES.

Editor THE AUTOMOBILE:

[1,424.]—I have a 1½-horsepower motor using the make-and-break spark. All wiring is perfect, but new batteries do not last more than about one hour. What is the cause? B. SEYFERT.

Bristol, Pa.

The trouble does not lie with either the batteries or the motor, but with the make and break ignition. Batteries, and particularly dry cells, are not adapted for service with this type of ignition, especially on a high-speed motor. Doubtless the make and break contact is not of the finest description, judging from the size of the motor to which it is attached, and the sparking contact is of unusually long duration, thus wasting half the energy of the batteries, while the legitimate needs of the igniter consume the other half. The best remedy is to convert the ignition to high-tension, or jump spark.

CONCERNING FLYWHEEL SIZES.

Editor THE AUTOMOBILE:

[1,425.]—Is there any simple rule or formula you can give us for figuring the size of flywheel we should have for a three-cylinder two-cycle motor, with bore of 6 1-2 and stroke of 6 inches? Would the same flywheel be right that it required for a six-cylinder four-cycle engine? ZIEGLER & BINSSE.

Columbus, O.

The data you give is altogether insufficient as a basis upon which to give exact information, while the wording of you first question implies somewhat of a misconception of conditions. Flywheel size, within certain limits, is determined primarily by the space that is available for the placing of a flywheel. As a general rule, it is well to have a flywheel as large as possible, since the larger it is the lighter it can be for a given balancing effect. A flywheel, for instance, of a given size is simply doubled in efficiency by doubling its weight. By doubling its diameter, however, without increasing its weight, its efficiency is quadrupled—

thus proving the desirability of large size and especially of concentrating the weight in a broad and heavy rim. A three-cylinder, two-cycle engine of ordinary construction requires, other conditions being equal, a slightly heavier flywheel than a six-cylinder, four-cycle of the same dimensions, because of the crankcase compression, the lighter crankshaft, etc. It is impossible to give exact figures for your particular engine without knowing not only the bore and stroke, but also the compression, the minimum, normal and maximum speed, etc. And, in any case, the practice even of the best designers is unsettled in this regard.

PERMISSION TO ERECT ROAD SIGNS IN MICHIGAN.

Editor THE AUTOMOBILE:

[1,426.]—I should appreciate it if your correspondence department could give me some information of the Michigan law bearing on the subject of sign and guide posts. Who is the proper authority to grant permission for the erection of road signs?

Ypsilanti, Mich. HERBERT L. CONNELL.

We doubt if you will find this is a matter of State law, but rather something over which towns and counties have direct jurisdiction, in which case the town or county authorities could give the necessary permission. However, this is something on which the States differ very radically, many making no provision at all. You can doubtless find a digest of the State laws in any public reference library in a large city. It is naturally a matter that would not be found in a motor vehicle law as where they exist sign post laws are usually of long standing, unless of very recent passage.

ABOUT BATTERY AND DYNAMO IGNITION.

Editor THE AUTOMOBILE:

[1,427.]—I have a four-cylinder engine in my automobile, and I am thinking about putting in a storage battery and dynamo to charge it. Now, how is a storage battery? Can you depend upon them? I have been using dry batteries. Can you start an engine with a magneto without batteries?

Louisville, Ky. GEORGE PERRY.

A storage battery constitutes a perfectly dependable source of ignition current, and on cars having engines of more than two cylinders is usually found to be much superior to dry cells. A magneto, of course, represents the best form of ignition apparatus for the multi-cylinder car, owing to its simplicity and dependability, as well as the fact that it is self-contained. There is no difficulty in starting on a good magneto.

CARS THAT FINISHED IN THE 1905 VANDERBILT.

Editor THE AUTOMOBILE:

[1,428.]—Please inform me the makes of cars that were classified from first to fifth in the 1905 Vanderbilt Cup race. READER.

Brooklyn, N. Y.

Hemery, in a Darracq, was first; Heath, in a Panhard, second; Tracy, in a Locomobile, third; Lancia, in a Fiat, fourth, and Szisz, in a Renault, had completed the ninth round when the race was officially declared off, owing to the crowd getting out on the course, so that only four cars finished.

SCALE GREATLY LOWERS RADIATOR EFFICIENCY.

Editor THE AUTOMOBILE:

[1,429.]—In reference to letter in "Letters Interesting and Instructive," No. 1378, from M. B. Hauser, Portland, Pa., beg to say that I think that perhaps the difficulty lies in the fact that the radiator of this correspondent's machine, and possibly the water jacket also, have become coated with "scale." Every one knows that all water contains a certain amount of mineral matter, and sometimes some portion of acid, and that all steam boilers have to be treated with a compound to prevent the pitting of the acid and to prevent scale. While water in a radiator does not necessarily boil, there is nevertheless considerable evaporation, and scale will form. I am using a compound which, I might say, was "invented" by a friend who is an expert engineer, and whereas before upon draining the radiator the water was discolored or red from rust, since using this compound it is always clear as crystal. There is absolutely no overheating, even when running the engine at high speed for quite some time. The compound is absolutely harmless, will not injure the metal in the slightest, and is much to be preferred to caustic soda or hydrochloric acid, inasmuch as it can and should be left in the machine at all times. About one tablespoonful of the powder is used to the quantity of water contained in the radiator, and, therefore, a pound or two, which would cost about 50 cents, would last an average motorist an entire season.

I have no doubt that many of your readers will be interested in this matter and that they would obtain much better results if they would use something of this nature to keep the cooling system free from dirt and scale. If Mr. Hauser will try some remedy to free his radiator and engine from scale I believe that he will experience very little trouble. Many people are not aware of the fact that so small a deposit as one-hundredth of an inch of scale will very seriously affect the cooling system, as scale is a non-conductor of heat, consequently the air has practically no opportunity of cooling the water as it becomes heated.

Sharon Hill, Pa. W. S. HAGAMAN.

IN SUPPORT OF INTERNAL PROTECTORS.

Editor THE AUTOMOBILE:

[1,430.]—In a reply to a letter published in "The Automobile," No. 1,405, written by H. C. Cresley, relative to his experience with internal tire protectors, we wish to say a few words.

In the first place, we know of no such party as H. C. Cresley, who claims to have had a pair of our protectors size 36x3 1-2 in two Michelin shoes, on the front wheels of his car, who states that in the very short distance of fifty miles, that the discs in the protectors worked loose and ruined the shoes and tubes. We can account for every 36x3 1-2-inch protector that has been placed on the market in this territory, and we know that none have been placed in the hands of the above-named party. Further than this, we have traced down every protector of this size that has been sold, and find that they have all been giving the very best of satisfaction.

The only circumstances under which a protector could go wrong would be in a case of defective workmanship, and in the manufacture of tires and tire equipment, no matter how carefully the output is supervised, occasionally some defective stock gets through, but we stand ready to replace anything that should prove defective, upon its being submitted to us for our inspection. If the facts had been as Mr. Cresley outlines, the logical thing would have been for him to have returned them to us, and demand an explanation as to why they acted in this way, as we fully guarantee them not to work loose.

These protectors are made to prevent punctures, and they do so without in any way injuring the casing and tube. If any one desires any information on this subject, we will take pleasure in referring them to many users who have had them in service for thousands of miles and who can recommend them highly.

WYATT & LISTMAN,
H. E. LISTMAN, Manager.

ABOUT THAT CYLINDER GRINDING PROJECT.

Editor THE AUTOMOBILE:

[1,431.]—I notice Mr. Sparenberg's answer to Mr. V. R. Lane in your issue of May 28, letter No. 1387. The trouble that anybody ever had with a gas engine will be but child's play if Mr. Lane fits his pistons according to Mr. Sparenberg's instructions and makes them tight-fitting for the cylinder. The regular practice is to grind the pistons conical, making them from about .008 of an inch smaller at the top than the bore of the cylinder, and about .005 of an inch smaller at the bottom. It does not matter much, within certain limits, how loose the piston is in the cylinder provided the rings are properly fitted, but if the piston is fitted in a gas engine cylinder in the same way that steam engine pistons are fitted, the piston will surely expand and stick in the cylinder. In engines intended for racing cars, or any continuous high speed work, the above allowances should be increased at least one-third. E. T. BIRDALL.

Rochester, N. Y.

A ROAD TEST OF THE COAL-BURNING STEAMER.

Editor THE AUTOMOBILE:

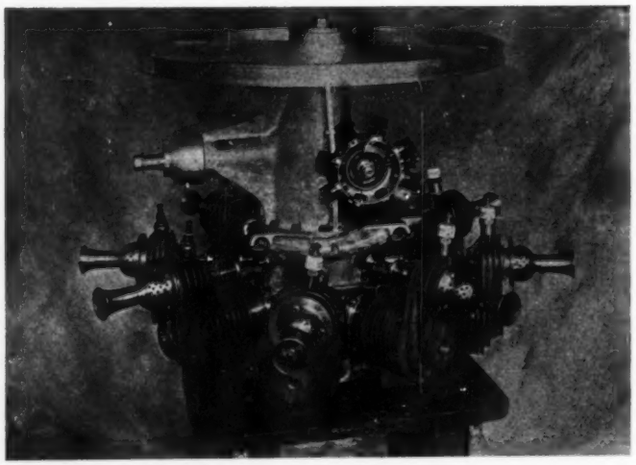
[1,432.]—I took my coal burner, steel tired, no differential-on-drive axle, out Saturday morning to see if all was tight, before I painted it. It acted as I expected it would. I went up a steep grade at a 25-mile gait. In turning around and backing up the drive axle acted fine. It does not make near the noise that other gasoline cars make. A D. & H. engineer saw me go up the hill and he states that I made a 90-mile gait. With 150-pound boiler pressure it will climb any hill that a rubber tire will do; the White steamer carries 500 pounds steam pressure. I ran the car across the shop floor back and forth with two pounds pressure.

Oneonta, N. Y. M. W. HAZLETON.

RECENT ACCOMPLISHMENTS OF THE AIR PILOTS

ROME, June 10.—Fifteen minutes 25 seconds have been spent in the air by Leon Delagrange, the French aeronaut, mounted on his Voisin flying machine. The exhibition, which proved to be a world's record, took place on the Place d'Armes before 6 A. M. before a large concourse of people and many members of the aeronautical societies of France, Italy and America; among the latter was Cortland Field Bishop.

After the ground had been carefully measured out, Delagrange gave the order to start up the motor. A couple of men seized the big propeller, swung it round briskly, and a second later the eight-cylinder Antoinette engine was humming merrily. After two minutes on the ground the apparatus rose in to the air to a height of two or three yards and commenced a huge circular movement. Ten rounds were covered, the height slightly varying, but never falling below one yard from the ground. When fifteen minutes had passed Delagrange was still aloft soaring through the air as perfectly as the moment he left the ground. Twenty-five seconds later, to the wild cheers of the enthusiastic spectators, the apparatus gradually came to earth,



Farcot Air-cooled Eight-cylinder Airship Motor.

The cylinders are ranged about a common center as shown, there being but a single crankthrow, to which all the connecting rods are attached. Power is taken from the shaft shown extending at right angles. Automatic inlet valves are employed. The motor is rated at 35-horsepower and is extremely light.

the Italian prize for a flight of a quarter of an hour having been clearly and fairly won. Delagrange had gained $8,000 by his morning's flight of 7.8 miles.

Later in the morning, before the French ambassador and a number of the members of the Court, Delagrange attempted to repeat the experiment, but owing to the force of the wind was obliged to abandon the attempt.

On the following Monday, while giving a final performance before the Queen Mother and a large crowd of spectators, Delagrange met with a slight accident. After completing a round the apparatus got out of its course and threatened to collide with a stack of wood. In order to avoid a collision the aeronaut operated his rudders with such bruskness that he brought the machine down to earth, a distance of about four yards, with a run. Delagrange was fortunately uninjured, and the damage to his machine was only of a trifling nature, easily repaired by a few hours in the aeroplane workshop.

By his performance at Rome Delagrange is entitled to the $8,000 prize offered by the Societe Aeronautique Italiano, but has not won the Armengaud $2,000 prize for a flight of fifteen minutes. The regulations for this event declare that the flight must be made on French soil and before three members of the commission appointed by the donator. Thus this prize still remains to be competed for although a flight of a quarter of an hour is officially accomplished. At the Buc grounds near Versailles, at Trappes, near Paris, or on the Issy-les-Moulineaux ground under very strict police control, it is possible that Delagrange or Farman will make an attempt to win the Armengaud prize immediately on their return from abroad.

Farman Carries Passenger and Wins $1,200 Bet.

GHENT, Belgium, June 10.—While his friend and rival Delagrange was creating a world's record at Rome, Farman was busy on a unique performance in the neighborhood of Ghent. A few months ago a bet was made by Ferdinand Charron with Farman, Santos-Dumont and Archdeacon, that an aeroplane would not cover a kilometer with two men on board within a period of one year. Charron has lost his $1,200, for just outside the old Flemish city Farman traveled 1,241 meters (1,356 yards) with M. Archdeacon on board his apparatus. The flight might have been longer had the length of the ground permitted an extension of the trip in a straight line.

Henry Farman's flight of 1,356 yards with Ernest Archdeacon as passenger, has been officially accepted by the Aero Club of France as the record for heavier-than-air machines with two persons on board. According to the report of the commission, the apparatus covered the distance without once touching the ground, the distance from the earth at certain moments being 26 feet. As soon as the aeroplane came to earth at the extremity of the field, the ground was measured by means of surveyors' instruments. To prevent any possibility of error, members of the commission were placed along the ground to be covered at distances of 200 yards, and an automobile carrying committeemen followed the flying machine.

Wrights Make Preparations for European Tests.

PARIS, June 10.—At last France is to know the truth about the Wright brothers. Wilbur Wright is now here and this week left for Nates with his apparatus packed in cases. Within two months, according to the promise of the Parisian agent of the brothers from Dayton, the American aeronauts will have made a public demonstration and proven to the world that they are the champions of the upper regions. Meanwhile French aeronauts remain skeptical.

The Wright brothers are well known in Paris, having spent a considerable amount of time here last year, watching the French experiments and visiting the various aeronautical shops. There is a disinclination to put them down as bluffers, nevertheless a strong feeling prevails that they have not accomplished all they claim. French aeronauts have arrived so gradually at the results achieved that the public refuse to believe that the Wright brothers have accomplished more in a very much shorter space of time. Delagrange having covered 7.8 miles in fifteen minutes and Farman having traveled nearly a mile in his apparatus with one passenger on board, Parisians are confident that their champions are now ahead of the two Ohio brothers.

There is no doubt whatever that preparations are being made for a flight, for the machine has been shipped under cover to the western town and Wilbur Wright has obtained permission from the authorities to use a large tract of plain for his experiments. The ground chosen has an area of 130 acres entirely without trees and protected by surrounding hills from eastern, northerly and western winds. As an aeronautical training ground the spot is perfect. An order has been given to a local builder to erect a shed 50 feet long by 30 feet wide and to lay down rails on which the apparatus will run to attain speed for rising from the ground.

The flying machine, which is now at the Chateau de Fonpietan, the residence of M. de la Reinty, a Frenchman interested in the American aeronauts, will be assembled in about ten days and flights made early in July.

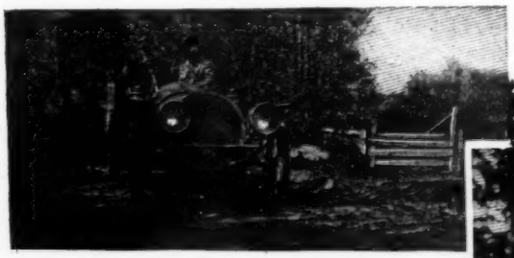
Across Pennsylvania in a Runabout

By Louis P. Reader

FROM Meadville to Philadelphia, and from the Quaker stronghold to New York is a trip we accomplished in a 75-horsepower runabout. Meadville being on the northwest corner of Pennsylvania, near the Ohio line, our run was a diagonal one across the State, following generally the line of the Philadelphia and Erie Railroad. The party consisted of my wife, her sister and myself, the machine to accommodate us being a three-seated runabout with its extra seat on the left running board. This arrangement I believe to be better than the rumble seat behind, and it is certainly more sociable. Before starting out I looked the car over carefully and in my desire not to be unprovided added a stock of tools sufficient to rebuild the car if necessary, so it seemed. After all the precautions, however, I made the mistake of not carrying enough spare inner tubes and shoes, having only one of each.

We left Meadville about 10 o'clock of as fine an October morning as it would be possible to imagine, when autumn coloring was at its best. We headed for Warren, about sixty miles away, with no schedule to make, and the freedom to stay on the road two weeks or one, just as we pleased.

Our troubles commenced about ten miles from Meadville with a slipping clutch. Of course Fuller's earth was one of the things I had not placed in the trouble box, and not one of the drug stores we passed on the way to Warren could supply it. However, one store gave us some crocus martus which helped us on to Warren, where we got the necessary Fuller's and the can to apply it. Arriving at the Carver House, lunch was duly appreciated, for we had had rather rough and hilly roads thus far, though better than those found later.



At 2:30 we were on the road again, heading for Kane, thirty miles, the entire distance up hill. Kane is claimed to be the highest town in the State. The first two miles of the road out of Warren were along the north side of a mountain and were about hub deep in gravelly mud; it was rough going, but it would have been rougher had it been clay. There is a better road on the other side of the river, via Glade, but repairs on the bridge at the latter place put it temporarily out of use and so compelled us to take the south side of the river. We struggled through without chains, however, and had fair roads and fine scenery the balance of the way to Kane. The country is thinly inhabited and scenes of abandoned timber operations were frequently passed, giving it a singularly desolate appearance. Kane has no garage, but a livery stable keeper allowed me to run the car in his barn over night, though he would not wash it for any consideration. We found a political demonstration under way at the New Fleming, our hotel for the night, but in spite of the crowd managed to secure good accommodations. Our baggage, which was carried on a rack on the rear of the car, was a mass of mud, but it was partially protected by an oilcloth and the mud and water had not soaked through the trunk walls.

The next morning, rain. However, it gradually turned into a light drizzle and I got the car out. I flushed out the cylinders with kerosene and located the cause of the slipping clutch. The drip pan on the car lies up close to the flywheel. The drain pipe from the pan had become stopped with mud and oil which had collected in sufficient quantity to splash up on the leather-faced cone clutch enough to make it slip. I had no further trouble after cleaning the pan.

I got the hotel porter to wash out the radiator with his hose. It was practically solid with mud and had caused the motor to steam during the last few miles the previous afternoon. My own experience shows me that the cooling system on a high-power six-cylinder car must be kept in perfect condition to give satisfaction. Of course this is the case with cooling systems on all motors, but I believe the cooling system on a four-cylinder motor will stand more abuse than one on a six. I have to keep the fan belt pretty taut to cool under hard work, and I believe a gear-driven fan, provided it can be run quietly, is preferable.

A Genuine Friend of the Automobilist.

We intended to make Lock Haven that evening, but it took us two days to reach that point instead of one. Since Kane is at the top of the ridge, our road was in general a long down grade through Ridgeway to Emporium. These towns are about twenty-five miles apart, as I recollect the distance, and about midway between the towns the road would gradually fade away to a mere lumber trail overgrown with grass and bushes; but as we neared town again it gradually grew better until a few miles before entering Emporium we ran on to a new and excellent State road. We took lunch at Emporium, and I afterward made some inquiries concerning the roads through Driftwood to Lock Haven. I had supposed there must be some sort of carriage road down the valley through which ran the Pennsylvania and Erie Railroad, but found I was mistaken. It appears there is nothing

beyond a trail through the woods from a few miles below Emporium. I eventually met a Mr. Brady who put me right. Now, this Mr. Brady is a man to look out for; he will load you up with oil and gasoline and anything you haven't got, and won't take anything for it but thanks, and is even shy about that. Mr. Brady informed me that I had better turn northeast to Coudersport, twenty-five or thirty miles (provided you don't lose your way) and then turn south to Lock Haven. This good Samaritan wound up by showing us the way out of town for seven miles and then gave us careful directions for the rest of the road to Coudersport. That's the kind of an automobile fiend it is a pleasure to meet. May his tribe increase!

The roads were fair for a time and I anticipated no trouble in reaching Coudersport; but it gradually grew rougher, and when it seemed likely to fade away entirely I asked a few questions of the natives to get my bearings. The hills in this region are steep and to get over them it is necessary to resort to the "switchback" road, which zigzags up the side of a mountain at a good stiff grade with some mighty short turns at the angles., especially short for a 122-inch wheelbase car. These roads are not frequently met in general touring, however, and I believe the long wheelbase has advantages which compensate for the disadvantage just mentioned. When we ran into Coudersport and made inquiry we were told there was no passable road south, but must continue to Galeton, twenty-five miles further east. The road was very rough and we did not pull into Galeton until about 6 o'clock in the evening, by which time it was already dark and the arc-lighted sawmills just at the western end of the town gave Galeton a very spectacular appearance. During the last ten miles I had some magneto trouble owing to my having dashed water on the radiator to clean it a little, while the motor was running, the consequence being a wet magneto.

This Road Last Repaired Fifty Years Ago.

We found a good hotel, of which I have forgotten the name, but no garage, and again I had to run the machine under a shed. I drew off the water to prevent freezing, and it was a precaution well taken, as it was far below freezing the following morning. I was informed by several people that even now I could not turn south, as the road, the old Coudersport Pike, was built seventy years ago, had not been repaired for fifty, and I had better continue east to Wellsboro before making a turn for the south and the west branch of the Susquehanna. I finally met a man who had driven with a horse and carriage through this road to Lock Haven the preceding summer, and he advised me that by careful driving I could make it. A company of U. S. infantry had been through the year before, and had repaired the bridges enough to let a wagon train through.

I decided to take the pike route, and in the morning we started for Germania, eleven miles, all up hill, then down to Oleona, the scene of Ole Bull's colonization scheme. Apparently nothing remains of the town but a house and barn and some ruins.

The road from this point on to Lock Haven is practically forty miles of wilderness. It climbs to the top of a ridge and follows it for miles. I believe we could see across thirty miles of other ridges east and west, all in their fullest autumn glory. The road was fair in spots, but a great deal of it was rotten corduroy. The corduroy road was built with logs of a pretty good size and where all the soil was gone from the top it is needless to state that riding over that particular road was no joke. About noon I carelessly ran too close to the edge of the road; the rotten ends of the logs gave way and dropped my left rear wheel sufficient to let the tool box and differential casing rest on the ground. The car is heavy, and it took me over an hour to jack up the car and gather enough stones to make a foundation to run out on. We passed Pumping Station, consisting of four families and an equal number of oil tanks.

The road through this section is very narrow and badly washed, usually taking the form of a ditch. or trench. two to six feet deep, and just wide enough for the car to scrape through. The road being closely overhung with scrub and undergrowth of all kinds, our faces were pretty well whipped and scratched.

At length, in the afternoon, we descended a long hill, remarkable for the number and size of its waterbreaks, to Lock Haven, on the West Branch. From this point on we were at least sure of traveled roads and a settled country. I ran the car into a garage for a washing, the first since leaving Meadville. It rained that night and the following morning, but at noon the weather cleared a bit and we decided to start for Williamsport. Of course our starting was the signal for a heavier downpour than ever. It took two hours to run the twenty-five miles. The roads were the usual "soft soap" variety, and it was impossible to hold the machine. We were in the ditch several times, in spite of chains. I carried another friend with us to Williamsport. Our chains broke and he was well initiated into the pleasures of automobiling by the time we arrived, soaked through. However, we found an excellent hotel, and an equally good garage. We stayed over the next day to give the roads an opportunity to dry up a little, and I improved the leisure to have the machine cleaned and a leaky radiator soldered, the twisting received over the mountains having started a slight leak.

Tire Trouble—but the Tires Were Not to Blame.

Up to this point I had no tire trouble, but we got it on the run to Harrisburg the following day. I mistook a small blowout for a puncture, put in my only spare tube without a careful examination, and in consequence had another blowout, a big one this time, in a couple of miles. I then patched the first tube as well as possible but it gave out in five miles. I ran on the flat shoe until it ran off, then tied it on with rope. The shoe finally cut in two and I ran three or four miles on the bare rim to Clark's Ferry.

We were only eighteen miles from Harrisburg, and I sent word in by a passing machine to send out a new tire or at least a machine to take us into town, but, though I afterwards found the garage was notified, for some reason they did not have energy enough to start out a machine for us. We waited from 5 P.M. until 10 P.M. and took the train for Harrisburg, dead tired. I got a blowout patch and a new tube the next morning and brought the machine to town. It was necessary to borrow a couple of crowbars from the section hands on the railroad nearby to straighten out the rim, which we had rolled down by running on it bare.

We finished the trip to New York over the well-known route from Harrisburg, via Philadelphia, without further incident other than blowing out two more tires. Being in a civilized country by this time we were able to get tires promptly and proceed.

I had put an extra gallon each of oil and gasoline in the tool case on the rack in the rear, but the cans were punctured and the oil and gasoline distributed over the tools before we had completed half the trip. We enjoyed the trip thoroughly, though there are some few incidents more pleasant in the recollection than the participation, such as the five-hour wait for a train at Clark's Ferry. The thirty or forty pounds of extra tools could have been profitably replaced by some Fuller's earth and a few spare tubes.

THINK VISITORS SHOULD BE EXEMPT.

BALTIMORE, MD., June 8.—Local autoists are of the opinion that autoists from other cities should be allowed to pass through the State of Maryland without having to procure a Maryland license. They have, also, urged that the Maryland law be changed so that the visitors may be permitted to remain in this State unmolested for 24 hours. Under the present law visitors are required to obtain a Maryland license before they bring their car into the State. This has resulted in the arrest recently of many visitors, who have been fined $1 and costs, for not having Maryland licenses. The local autoists believe that an arrangement should be made here so that visitors could enter the State and get licenses at court houses in any of the cities and towns of the State, instead of having to obtain these licenses before entering Maryland, from the officials at Annapolis.

PRINCE EDWARD ISLANDERS FIGHT LAW.

CHARLOTTETOWN, P. E. I., June 15.—Automobile owners of this city have held a conference and have decided to test the validity of the recent act of the Provincial legislature authorizing counties and municipalities to bar automobiles from the roads, many of the counties and towns already having done so, Charlottetown being among the number. A circular has

Riding Out to Defy a Medieval Law.

been issued calling attention to the fact that a franchise was granted to a company to run motor vehicles as far back as 1902, and in 1906 a second was issued to run trackless trolley cars, neither of these acts having met with any protest. They further point out that as no indemnity has been provided for by the recent act, the machines owned in the Province will be a dead loss. The accompanying photograph shows the opening of the test case, the car being run through Charlottetown's streets on one of the forbidden days, so that the hour's ride may cost the participants a $500 fine or six months in jail, if the act be upheld. W. K. Rogers is driving the car, Bruce Stewart is beside him, while the occupants of the tonneau are J. A. S. Bayer, Dr. Allen and George E. Auld.

NEW ORLEANS WANTS AUTO SHOW.

NEW ORLEANS, June 1.—"An automobile show for New Orleans and the South this fall" is the slogan of local automobile dealers and enthusiasts. The plan has been talked over by the local dealers for some time, and while the plans are still in their infancy, still the prospects are good. The automobile dealers of this city and the South have been quick to take up with the favorable public sentiment that has been created by the good roads proposition and also the success of the Savannah races and will use it to still further advantage. They argue that the time is now ripe for a Southern automobile show to be held here in the metropolis of the South.

The South is being recognized more and more as one of the most fertile fields for the automobile industry, were it but fostered and cultivated. Those who are at the head of the movement for the show are meeting with great encouragement from all over the South and from the various manufacturers themselves.

The opening of the Legislature at Baton Rouge sees the Louisiana Automobile League hard at work. They have established a lobby there, which will work for the advancement of the good roads proposition and also look after the interests of the automobilists. The lobby is composed of good, careful men and it will be conducted in a clean, above-board manner. It is hoped to get the Legislature to build a shell road from Baton Rouge to New Orleans, a distance of about one hundred miles. This road is to follow the Mississippi river and will be one of the most picturesque in the South.

BALTIMORE TRIES OUT DUST LAYERS.

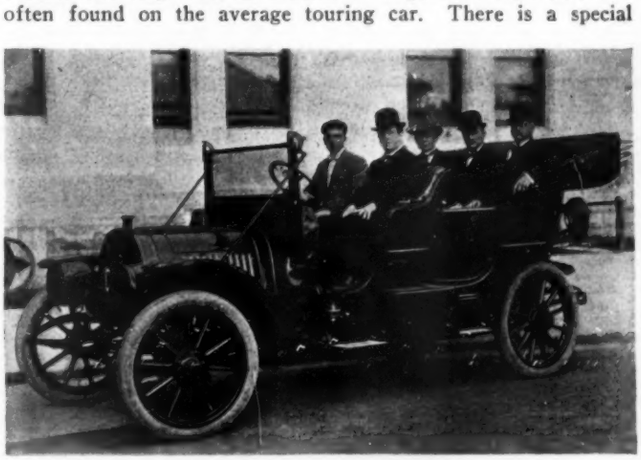
BALTIMORE, June 8.—An experiment is being tried here which promises to do away with the dust nuisance during the coming summer on the highways traversed extensively by autoists in going to and from the city. This dust preventive, intended chiefly for macadam roads, is called terracolio, a bitumen compound. The experiment has been conducted by Commissioner of Street Cleaning Wickes, on Park Heights avenue, back of Druid Hill Park, which is the most popular thoroughfare in and around the city for motorists, and he declares that the results have been quite satisfactory. The material is black and resembles pitch. It is mixed with water in the road sprinklers. The road has shown no effects from its application, except for the absence of dust. The mixture was first applied at a strength of an 18 per cent. solution with water. This solution will be reduced gradually until a 2 per cent. solution will be used permanently.

AUTO FIRE APPARATUS FOR SPRINGFIELD.

SPRINGFIELD, MASS., June 15.—Automobile fire apparatus is very popular in this city as will be shown by the recent action of the city council's finance committee in recommending that two more motor power wagons be added to the present automobile equipment. One wagon is to be a combination hose and chemical truck, the other to be a regular hose wagon. These wagons are to be put in the Chestnut street engine house, which will be an automobile station only. There is at present a flying squadron stationed there, the wagon being a Knox type. It is estimated that the wagons will cost about $3,000 each. The committee also recommended that another automobile patrol wagon be built for the police department, the style of which has not been decided upon.

COMMISSIONER MACDONALD'S NEW AUTO.

HARTFORD, CONN., June 15.—Highway Commissioner James H. MacDonald, of Connecticut, is not only one of the most able and persistent advocates of the cause of good roads, but he realizes better than probably anyone else in a similar position the value of the automobile for his use. In the accompanying photograph he is shown in the new Pope-Hartford car recently delivered to him by the Pope Manufacturing Company. It is finished in a light mahogany brown with black enamel trimmings and has a number of special devices on it not often found on the average touring car. There is a special



Specially Equipped Pope-Hartford Road Car.

rack made to accommodate a typewriter and a stenographer will accompany the commissioner on all his runs. There is also a special type of gradometer and a most complete system of electric lighting. The State seal on the doors adds to its imposing appearance. With the aid of his new car Commissioner MacDonald will be able to cover many times the territory and increase his scope of usefulness to Connecticut's progressive good roads campaign which is now in full swing throughout the State.

FAUBER PERFECTS HYDROPLANE.

PARIS, June 3.—What is probably the first attempt in Europe to present the hydroplane as a comfortable cruising craft is due to an American inventor, W. H. Fauber, who is still well known in the States by reason of his connection with the cycle industry, and his proprietorship of the Fauber Manufacturing Company, at Chicago. He has been working for a couple of years on an improved type of hydroplane and has now so far perfected his models that he has made arrangements for the building of his craft for the public.

The Fauber hydroplane, which would have taken part in the Monaco meet but for delays in the issuing of patents, has undergone its trial trips in the Seine at Nanterre, near Paris, and has covered the measured kilometer in 60 seconds dead, which is at the rate of nearly 38 miles an hour. With some slight improvements in lines and propeller, it is believed by Fauber that he can carry the speed to rather more than 40 miles an hour.

Distinctive in the Fauber hydroplane is the fact that when at rest in the water it has all the lines of a graceful displacement boat. Its sharp bow cuts the water clean and its special type of hydroplanes, about which the inventor does not wish to be communicative, assure it a stability that has been totally lacking in this class of boat up to the present. Fauber is so well pleased

Fauber's Hydroplane at High Speed.

with the results obtained in his racing craft, which he claims to be faster and capable of operating on rougher water than any other hydroplane yet built, that he has made arrangements for the construction of a series of 21-foot boats to be fitted with a four-cylinder engine and used as pleasure cruisers. A 26-foot racer which will embody all the improvements suggested by the present racer is also under construction and will be tried out on the Seine during the summer. The Fauber racing boats are equipped with eight-cylinder Antoinette light-weight engines of 50 horsepower.

THE CARRIAGE WAITS "WITHOUT," MY LORD!

"The carriage waits without, my lord."
"Without what, gentle sir?"
"Without the left-hand running-board,
Without the French chauffeur,
Without a drop of gasoline,
Six nuts, the can of oil,
Four pinions, and the limousine,
The spark-plug, and the coil;
Without the brake, the horn, the clutch,
Without the running-gear,
One cylinder—it beats the Dutch
How much there isn't here!
The car has been repaired, in fact,
And you should be right glad
To find that this much is intact
Of what your lordship had.
The garage sent it back, my lord,
In perfect shape throughout;
So you will understand, my lord,
Your carriage waits without."

—"Harvard Lampoon."

THE AUTOMOBILE CALENDAR.

AMERICAN.

Shows and Meetings.

June 25-27.....—Detroit, Third Annual Summer Meeting of Society of Automobile Engineers.
Dec. 31-Jan. 7..—New York City, Grand Central Palace, Ninth Annual Automobile Show, conducted by the American Motor Car Manufacturers' Association, with Exhibits by the Importers' Automobile Salon, Inc., Alfred Reeves, general manager, 29 West 42d St.
Jan. 16-23.....—New York City, Madison Square Garden, Ninth Annual National Show of the Association of Licensed Automobile Manufacturers. (Exact date to be announced.
February, 1909. —Chicago Coliseum and First Regiment Armory, Eighth Annual National Exhibition, National Association of Automobile Manufacturers.. (Exact date to be announced.)

Races, Hill-climbs, etc.

June 20-26.....—Albany, N. Y., Annual Five-day Tour of the Albany Automobile Club.
June 24-27.....—New York and Philadelphia, Double-Head Endurance Run to Delaware Water Gap, under the auspices of the "Public Ledger" of Philadelphia.
June 24-27.....—Chicago, 1,200-mile Reliability Run, Chicago Motor Club.
June 27.....—Norristown, Pa., Skippack Hill Climb, Norristown Automobile Club.
July 4.....—Long Branch, N. J., Race Meet, Elkwood Park Automobile Association.
July 4.....—Lowell, Mass., 250-mile Road Race, Lowell Automobile Club.
July 4.....—Wildwood-by-the-Sea, N. J., Annual Speed Tournament, Motor Club of Wildwood.
July 7-8.....—Buffalo, N. Y., National Convention of the American Automobile Association.
July 9.....—Buffalo, N. Y., Start of the Fifth Annual A. A. A. Reliability Touring Contest.
Aug. 14.....—Chicago, Third Annual Algonquin Hill Climb, Chicago Motor Club.
Sept. 5-9.....—San Francisco-Los Angeles Reliability Run, Automobile Dealers' Association of San Francisco.
Sept. 14.....—Chicago, Annual Economy Run, Chicago Motor Club.
Oct..24.....—Vanderbilt Cup Race, Long Island Course, auspices of Vanderbilt Cup Commission.

FOREIGN.

Shows.

Oct. 11-18.....—Paris, International Congress and Public Exhibition on Roads and Road Making for Modern Locomotion, French Ministry of Public Works.
December.....—Paris, Eleventh Annual Salon de l'Automobile, Grand Palais, Automobile Club of France.

Race Meets, Hill-climbs, etc.

July 6.....—Voiturette Grand Prix, Dieppe Circuit (Automobile Club of France.)
July 7.....—Grand Prix of Automobile Club of France, Dieppe Circuit.
July 13-17.....—Ostend, Belgium, International Race Week, Automobile Club of Ostend.
Aug. 12.....—Ardennes Circuit Races and Coupe de Liederkerke, Automobile Club of Belgium.
August.....—France, Coupe de la Presse, Automobile Club of France. (Exact date to be announced.)
Aug. 29-30.....—France, Mont Ventoux Hill Climb, Vauclusien Automobile Club.
Sept. 1-8.....—French Voiturette Contest, Auspices "L'Auto."
Sept. 6.....—Bologne, Italy, Florio Cup Race, Automobile Club of Bologne.
September.....—Paris, Vichy Aeroplane Competition, $4,000 Prizes, Aero Club of France.
Oct. 11.....—Berlin, Germany, Gordon Bennett Balloon Race, Aeronautical Club of Berlin.

Summit, N. J., is the latest town in the State across the Hudson to work a speed trap. The trap itself is actually in New Providence, which is only a name, and on Springfield avenue, west of the West Summit station. It is located where a road crosses Springfield avenue diagonally from the northeast, and the presence of the crossing is considered sufficient excuse to compel autoists to slow down, or rather to be trapped because they do not do so, under the clause in the law requiring a speed of fifteen miles an hour "at prominent intersections."

HIGH PERCENTAGE IN FRENCH COMMERCIAL TEST

PARIS, June 10.—It is somewhat embarrassing to pick out the winners in the industrial vehicle competition that the Automobile Club of France has just brought to a close after one month's traveling in the north and west of France, for the cars are so closely grouped that all might be considered victors. A fuel consumption test on the last stage of the journey can hardly be taken as conclusive, all kinds of fuel being allowed, and thus, by reason of differences in price arbitrarily dividing up vehicles that were otherwise on an equal footing.

Thirty-five industrial vehicles, from light-weight delivery vans to 5-ton trucks left Paris a month ago. Of this number twenty-four have entered the capital under official recognition, having changed nothing more important than spark plugs, valve springs, etc.; in a word, with the mere exchange of such parts as are always carried on any long-distance touring car. In addition to motor transmission and all running gear, tires and wheels, hitherto the weakest part of heavy trucks, were sealed and came back to Paris on the victorious twenty-four. A small number finished the run and made all controls on time but were disqualified for slight accidents to machinery which could be repaired on the road, but necessitated the changing of some sealed part. Thus, a front-drive truck burned out the bearing of one of its rear wheels free from all driving mechanism. The repair necessitated taking off the wheel and entailed disqualification although all other conditions were filled. In the same way another truck was obliged to retire from official observation by reason of one of its rubber blocks having to be changed.

In the cab competition two out of the eleven vehicles had to withdraw owing to the changing of sealed parts. The nine others made all controls on time and returned to Paris after a month's traveling with every part intact. The net result is surprising, 68.5 per cent. clean scorers in the truck classes and 82 per cent. in the cab section, under rigorous rules, being a proportion never attained in any previous competition.

It might be objected that the cab competition was not so thorough as that for the commercial vehicles, the long straight-away runs that had to be made over roads that were excellent on the whole not being so trying to the mechanism as a varied service in crowded city streets often badly paved and ill kept. For the trucks the competition was harder than actual working conditions, the full load having to be carried continuously, whereas under commercial conditions there is a certain proportion of running light. One reason for the great success of the vehicles is the fact that speeding with the heavy trucks was eliminated by a system of frequent controls. A commercial speed was demanded and insisted upon, thus at the same time proving the qualities of those vehicles suited for heavy transport and preventing premature wrecking of machines.

The official classification was made on a fuel consumption test of 69.6 miles over various roads not sufficiently hilly, however, to allow the vehicles to do any coasting. The formula employed was $\frac{T\,C}{P\,D}$, in which T was time in hours, C cost of fuel in francs, D distance covered and P the total weight. As the fuels allowed were the following, gasoline at 40 francs 50 per hecolitre, white spirit at 27 francs 75, carbureted alcohol at 33 francs 70, and benzol at 24 francs 65, the users of gasoline were naturally handicapped. The cabs were on an equal basis in this respect, all having to run on alcohol for the entire distance; speed limited to 20 miles an hour, there was in reality a slight advantage to low-powered single and two-cylinders.

Under the general classification first prize goes to a Saurer truck, manufactured by the well-known Swiss firm at Arbon. With a useful load of three tons and a total weight of six tons, the Swiss truck covered the 69 1-2 miles on 4.4 gallons of white spirit. Second position fell to a little single-cylinder De Dion of 3.9 bore by 4.7 stroke which, despite its small power plant, carried a load of one ton and a half for an entire month without any signs of weakness. The third prize went to a Saurer passenger 'bus in the class for more than ten people, fourth to a light delivery Panhard, and fifth to a 3-ton Saurer. Though it permitted of a complete classification, the fuel test tended to make confusion, for it arbitrarily divided vehicles that were otherwise equal. Those eligible for and taking part in this final test comprised 4 Dietrichs, 3 Saurer, 3 Panhard, 2 Cohandet, 1 Vinot-Deguingand, and 1 Brohout, all of which had their full teams in at the end of the competition. Berliet presented 7 trucks, having lost one on the journey through a defective rubber bandage. De Dion was eligible to put in two of his three competing vehicles, and Peugeot had but one perfect scorer out of five starters.

Six of the perfect scorers are eligible for purchase by the army, having fulfilled all conditions set forth in the military regulations. The trucks comprise two Berliet, two Cohandet, one Vinot-Deguingand and one Panhard. It remains for the constructors to arrange terms with the military authorities.

The fuel consumption test for the cabs gives first place to a two-cylinder Dorion-Flandrin, which consumed but 1.3 gallons of alcohol for a distance of 69.5 miles. A single-cylinder Brouhot made the same distance on 1.8 gallons. Bayard-Clément was the most economical of the four-cylinder cabs, as was proved by the consumption of 2.2 gallons for the same distance. The winning Dorion-Flandrin had at its power plant a 10-horsepower engine of 3.1 and 4.7 bore and stroke, Longuemare carbureter and Bosch high-tension magneto. The feature of the Brouhot which took second prize for fuel economy was a single-cylinder engine of 9-horsepower, bore being 4 inches and stroke 5.1. Unlike the others, transmission was by belt, completely enclosed to protect it from dirt and oil. This type of transmission, neglected for some time by constructors, is now gaining popularity among the makers of small pleasure and commercial vehicles and bids fair to be revived to a considerable extent.

HEMERY CAPTURES ST. PETERSBURG-MOSCOW HONORS

MOSCOW, June 6.—Hemery, after lying quiet since his break away from the Darracq eight-cylinder flyer, has secured a notable victory by taking the first prize in the St. Petersburg-Moscow race, covering the 425 miles on his Grand Prix Benz in 8:30:48. Last year's record, made by Duray, has been beaten by 52 minutes. Second place was secured by Demogeot, driving the four-cylinder Darracq racers which Caillois handled in last year's Grand Prix. His time was 8:42:12. Third place in the high-powered class goes to the English driver Pope, handling an Itala. The cars in this class which failed to finish included a full team of Dietrichs, a Fiat and a Mercedes. By winning this race on the actual machine which he will drive in the Grand Prix Hemery has enormously increased the esteem in which he is held by the public as one of the probable winners of the race on the Dieppe circuit. No other car built for the Grand Prix is sufficiently advanced to be able to start in a race five weeks before the French Automobile Derby.

Wagner has taken first prize in the second category reserved to cars not exceeding 130 millimeters bore, running the Fiat racer of last year from St. Petersburg to Moscow in 8:49:48.

THE AUTOMOBILE

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SHOWING UP BOTH SIDES OF THE CASE

Throughout all the host of accusations that have been hurled against the automobile as a destroyer of the roads, nothing whatever has been heard of the far worse activities in the same direction that the horse is responsible for, and that he has been responsible for since the dawn of history. By long association, we have grown so familiar with the damage done by the horse and wagon that we do not look upon it in this light. Consequently, those who most rabidly denounce the automobile as a road destroyer look upon the holes and ruts created by its slow-going predecessor as a perfectly legitimate form of wear and tear against which no objection can be raised. Of course, this is a prejudiced view, but then so are the majority of other objections raised against the power-driven vehicle. The automobile leaves a mighty cloud of dust in its wake passing along a country road, and, to say the least, this is annoying, but if it were not for the manner in which the horse and narrow-tired wagons pulverize the road surface there would be nothing like as much dust present, while the horse raises more than the auto, speed considered.

It is not to be contended for a moment that the automobile does no damage to the roads, but it is a fact easily demonstrated to the satisfaction of the most skeptical that at the speeds ordinarily averaged by automobiles the car is actually a road-improver rather than a destroyer. There can be no denying the fact that above thirty miles an hour, the passage of the pneumatic tire creates considerable suction and tends to lift the top dressing, and in skidding round curves at speed the latter is forcibly removed to the outside of the curve, but by no stretch of the imagination can the automobile be truthfully accused of creating deep, narrow ruts or the numerous heavy "pock-marks" to be found on the best of road surfaces, and that are characteristic of the horse's passage. When the matter is considered impartially, it will be found that the horse is responsible for a far greater measure of damage than the automobile, and it is, moreover, of a nature not easily prevented or repaired. The use of an effective binder, properly applied, makes a road on which the automobile does little or no damage even at racing speeds, except on curves, and properly built roads will be free from even this, but the horse is a road-destroyer even when he is standing hitched. A little consideration of both sides of the question should do much to mold popular opinion to a more equitable view of the case.

* * *

ENTERING UPON A NEW ERA OF PRICES

Ever since the automobile assumed sufficient importance to demonstrate the fact that it had come to stay, and was not the fad of the moment, there have been an endless number of prophets, who, figuring by the precedent set by the bicycle, have been predicting the coming of the "poor man's automobile." When, after a number of years of steady development, a good bicycle could be purchased for $50, it was really a machine that embodied far better material and workmanship than its predecessors that sold for three times as much. Merely because a great deal of thought and capital had been steadily devoted to its betterment. The past five years have brought forth corresponding advances in the case of the auto.

Whether there will ever be such a thing as the "poor man's automobile" has been discussed pro and con on several occasions in these columns and nothing that has happened in the interim can be considered as sufficient cause for altering opinions there set forth. But that the time has come when it will be possible for the man in ordinary circumstances to maintain an automobile that is neither a cheap, low-powered car or one that is merely a low-priced imitation of better things, has actually arrived, now appears to be a fact. Numerous American makers have brought forth extremely creditable productions in the shape of low-priced cars in past years, and the number of these machines that have been sold, as well as the service they have performed, forms an imposing record of their success. But, after all, few, if any, of these little machines satisfied the ambition of the newly fledged autoist for very long. As a stepping-stone to bigger and better things in the shape of a car, they served their purpose admirably, and proved an excellent initiation, but not every investor can afford to go through this process of education. The man with the low-priced car found it lacked many things, once his first pride of possession wore off. Judging from some of the new models recently announced, designers have had their eyes open to this state of affairs, and their productions reveal it in no uncertain manner. In fact, it seems safe to predict that the passing of 1908 will mark the beginning of a new era in automobile prices and values.

BUFFALO CONVENTION IS OF NATIONAL IMPORTANCE

OFFICIAL recognition is being accorded on every hand of the importance of the Good Roads and Legislative Convention called by the American Automobile Association to meet at Buffalo, July 6, 7 and 8. Illustrative of this is the letter which is being sent out by State Engineer Skene, of New York, to the town boards and supervisors of 934 towns. It follows:

A National Good Roads Convention will be held in the City of Buffalo, July 6, 7 and 8, 1908. This will be the first National Good Roads Convention to be held in this country in which the several State highway officials, the farmers, as represented by the National and State granges; the motorists, as represented by the American Automobile Association, comprising over 200 clubs, and the Road Makers' Association, will cooperate.

One of the most important features of this convention will be the practical demonstration of highway maintenance and construction. Seventy-five miles of road will be in course of improvement and within easy access of the city of Buffalo, and about twelve miles of road will be used to demonstrate the several dust-laying and road-surfacing preservatives. This work will be under the direction of this department.

You are earnestly requested to be present and cooperate in making this convention as successful as possible.

FREDERICK SKENE,
State Engineer and Surveyor.

Robert P. Hooper, Chairman of the A. A. A. Good Roads Committee, has requested similar letters to be sent out by the State highway commissioners of Michigan, New Jersey, Illinois and Massachusetts.

The speakers at the convention and their subjects will be: James H. McDonald, president American Road Makers, Hartford, Conn., "Construction of Macadam Roads"; Frederick Skene, State engineer and surveyor of New York, "History and Development of Improved Highways"; W. E. McClintock, highway commissioner, Massachusetts, "Repair and Maintenance of Macadam Roads"; Joseph W. Hunter, highway commissioner, Pennsylvania, "Road Materials"; A. N. Johnson, State engineer, Springfield, Ill., "Road Problem in the State of Illinois"; P. A. Hooker, supervisor of public roads, New Jersey, "Surfacing of Macadam Roads"; Horatio S. Earle, State highway commissioner, Detroit, Mich., "Drainage and Sub-base of Improved Roads"; L. W. Page, U. S. Department of Agriculture, Washington, D. C., "Effect of Automobiles on Macadam Roads, and Question of Preservation Under New Conditions"; D. Ward King, Missouri State Board of Agriculture, Maitland, Mo., "Treatment of Earth Roads"; Stephen Ryan, State Road Directory, New York, "Improvement of Town Roads."

Other speakers, whose subjects are yet to be announced, are: Ex-Governor Batchelder, of New Hampshire, president of the National Grange; Aaron Jones, master of Indiana State Grange, Indiana; F. A. Derthick, master of Ohio State Grange, Ohio; F. N. Godfrey, master of New York State Grange; Jothan P. Allds, senator, Highway Code, Norwich, N. Y.; R. B. Boman, deputy State highway commissioner, Pennsylvania.

WHY EUROPE MISUNDERSTANDS RACING SITUATION

PARIS, June 10.—It is impossible to give a better idea of the gross ignorance of automobile Europe regarding American matters than by a textual translation of a portion of an article published in the semi-official organ of the Automobile Club of France. It reads as follows:

When the American Automobile Association sent its regulations for the Vanderbilt Cup we noted that they in no way conformed to those adopted at Ostend by the Federation of National Automobile Clubs. A few days later M. René de Knyff, president of the Sporting Commission of the Automobile Club of France, wrote a letter of protestation to the president of the Automobile Club of America. This letter was adressed to the A. C. A., the only automobile controlling power in America recognized by the A. C. of France.

The Automobile Club of America then requested the A. A. A. to adopt the Ostend regulations for its race. The A. A. A. refusing to give satisfaction to the Automobile Club of America, the club purely and simply disqualified the event and telegraphed this decision to all the clubs of the Federation asking that they should give their support. Each telegram was reply paid to the extent of 150 words.

Having information of this nature, it is not surprising that the Sporting Commission of the Automobile Club of France, at its special meeting this week, should have been of the opinion that the only course open for it was to support the Automobile Club of America, and, like that body, disqualify the Vanderbilt Cup.

In French eyes the matter is simplicity itself. The A. C. F. is under the impression that the Automobile Club of America is a body in every respect similar to itself. As everybody knows, the French Club is undoubtedly the club of France; its officers and leaders are the heads of such firms as Panhard, Renault, Brasier, Darracq, Dietrich, Bayard-Clément, Mors, Delaunay-Belleville, etc. The entire automobile industry of France is represented in the Automobile Club of France; there is no opposition; other bodies have been formed for specialized work, or are provincial clubs occupied entirely with local affairs.

It is no exaggeration to say that nine-tenths of the directors of the Automobile Club of France are under the impression that a similar condition exists in the United States, and that the Automobile Club of America is its counterpart in the western republic. No other explanation is possible for its recent action in connection with the Vanderbilt Cup rules. So convinced are they that they are right that this recent decision to boycott the Vanderbilt and support the Grand Prix of America, which the A. C. A. may put on foot, has been communicated to all European bodies and their support earnestly solicited.

M. René de Knyff, president of the Racing Board of the A. C. F., is reported to have declared that he was very well pleased with the decision. "The Automobile Club of America is the only official organization in the United States and we are bound to support it in the attitude it has assumed towards the Automobile Association, which has flagrantly ignored the rules of the Ostend conference in promoting a contest not in accord with the agreements then made."

Count Adalbert Sierstorpff, the German representative, states that his club has written all German automobile manufacturers, advising them not to enter for the Vanderbilt Cup contest.

Doubtless the only way to straighten out the difficulty would be for the American Automobile Association to send a deputation to the international conference to be held at Dieppe during the French Grand Prix. At this meeting, which will be attended by delegates from all the European national clubs as well as the Paris representative of the A. C. A., the question will be fully discussed and no doubt an attempt made to get the international federation to vote in favor of the boycotting of the Vanderbilt contest. It being impossible to doubt the value of uniform rules for all great automobile races, and the European bodies as a whole being ill-informed on this matter, there is every possibility of the French boycott becoming a European boycott. The only way to prevent this would be for the American Automobile Association to put its side of the case before the conference. Europe needs educating.

NEW YORK CLUB NAMES DATE FOR ITS EUROPEAN RACE

THE Automobile Club of America has announced Thanksgiving Day, November 26, 1908, as the date of the race it proposes to run at Savannah under European rules. Not more than three cars of any one make will be eligible to compete. Although there has been no limit set to the number of cars eligible to compete, the club's contest committee reserves the right to run eliminations, if necessary. As the club is understood to have guaranteed the Savannah club a minimum of at least twenty foreign entries, if its guarantee be made good, there is a chance that this condition may arise.

The entry fees are as follows: $750 for one car; $1,300 for two cars of the same make; $1,750 for three cars of the same make—thus providing $750 as the fee for the first car, $550 as the fee for the second car, and $450 as the fee for the third car when a maker enters a full team of three machines. A deposit of $300 per car must accompany each entry when the blank is filed with the committee.

Entries will close October 1, at regular fees, but additional entries will be accepted up to November 1, upon payment of an extra fee of $250 per car.

The limitations of weight and cylinder volume set forth in the club's official announcement follow, of course, strictly the European rules, which call for a bore of 6.1 inches (155 millimeters) maximum for four-cylinder cars, or the equivalent in an effective surface, or 75.4678 square millimeters for machines otherwise cylindered, and a minimum weight of 2,424 pounds (1,100 kilos) including oil for the motors and transmission.

Coincident with the announcement of the date and conditions of the race was an appended statement that the Acme Motor Car Company had wired for an entry blank and would enter a car in the race. H. S. Sternbergh, president of the company, 'phoned a New York representative that his company had sent no such telegram and had reached no such decision.

"A great mistake has been made in this matter," said he. "No telegram of this character or anything which could be interpreted as signifying the intention of this company to enter, at this time, the Grand Prize race, has been sent by me to the Automobile Club of America. I have investigated the matter this morning and can find no official or employee of this company at the factory who has sent such a telegram. I have asked the Automobile Club to explain to whom the telegram was sent and how it was signed and when sent."

Subsequently it transpired that J. C. Finney, the company's Savannah agent, had bespoken a number in the race. Learning this, Mr. Sternbergh wired: "We learned this morning from our Mr. Finney, in Savannah, Ga., that he had entered one of his cars in some race or other to be held at Savannah. We do not know what race, nor when. Of course we, as the Acme Motor Car Company, have nothing to do with this entry."

Arthur W. Solomon, secretary of the Savannah Automobile Club, who has been in New York this week in consultation with the local club's officials and contest committee, made public the fact that on June 5 the club's resignation had been forwarded to President Hotchkiss and its receipt acknowledged. At the same time the resignations of Frank C. Battey from the Racing Board and Arthur W. Solomon from the Touring Board were also forwarded. These resignations were, of course, to be expected in view of the club's decision to cast its racing lot with the New York club. As the resignations had not yet been acted upon, Secretary Elliott, of the A. A. A., did not, of course, make public the fact that they had been handed in, but it is anticipated that this will be announced within a few days.

A. A. A. TOUR WILL BE A TRIUMPHAL RUN.

Participants in the annual A. A. A. tour, which will embrace contests for the Glidden and Hower trophies, according to reports received at the Touring Board headquarters in Buffalo, are justified in anticipating the same triumphal passage as has always characterized their reception along the route of the run.

Chairman F. B. Hower reports that the number of entries to date is the same as at the same time last year, although the definite assurances from manufacturers indicate a larger entry than last July. Mr. Hower says he cannot understand why the participants do not take advantage of getting a low numeral by entering early instead of waiting till the last week as they usually do. Entries for the tour close July 3 with F. B. Hower, 760 Main street, Buffalo, N. Y. The entries to date are:

For Glidden Trophy—No. 1, Charles Clifton, Great Arrow; No. 2, Charles Clifton, Great Arrow; No. 3, J. W. Maguire, Great Arrow; No. 4, R. M. Owen, Reo; No. 5, E. H. Parkhurst, Peerless; No. 6, E. H. Parkhurst, Peerless; No. 7, E. H. Parkhurst, Peerless; No. 8, R. M. Owen, Premier; No. 9, R. M. Owen, Premier; No. 11, Gus G. Buse, Thomas.

For Hower Trophy—No. 100, R. D. Garden, Great Arrow; No. 101, R. M. Owen, Reo; No. 102, W. H. Vandervoort, Moline; No. 103, Charles Clifton, Great Arrow; No. 104, Henry Johnson, Premier.

For Certificate—No. 10, Paul Gaeth, Gaeth.

Non-Contestants—No. 98, R. M. Owen, Premier Pilot Car; No. 99, Charles Clifton, Great Arrow, Chairman's car.

TO HAVE A BALLOON PARK AT WORCESTER.

WORCESTER, MASS., June 15.—J. P. Coughlin, president of the Worcester Automobile Club and a member of the New England Aero Club, announced last Saturday that Charles J. Glidden of Boston, the famous globe-encircling automobilist and vice-president of the Aero Club, was negotiating with him to at once establish in Worcester a park for balloon ascensions.

REEVES LOOKING FOR CHICAGO SHOW PLACE.

CHICAGO, June 11.—Alfred Reeves, general manager of the American Motor Car Manufacturers Association, passed two days in Chicago this week canvassing the situation as regards the holding of an independent show in this city next winter. The A. M. C. M. A. had had some correspondence with the two local organizations, the Chicago Automobile Club and the Chicago Motor Club, relative to the two bodies assisting the dealers in the promotion of the affair and it was with the idea of looking over the available buildings that Mr. Reeves came to Chicago. While here he conferred with representatives of each club and also looked at the two buildings under consideration—the new Seventh regiment armory and the Dexter park pavilion at the stockyards. The former building, he thought, was too small for the purpose, while he changed his mind regarding the stockyards proposition when he found that the elevated express service could land people at the doors in 18 minutes from downtown. The pavilion has 20,000 square feet more than either the Madison Square Garden or Grand Central Palace, and Reeves greatly fancies it. However, no final action will be taken in the matter until the next meeting of the show committee of the A. M. C. M. A., which will be held late this month or early in July.

SCRIBES AND SALESMEN TO CROSS BATS.

A feature of the annual reunion of Oldsmobilists, which is to be promoted on Saturday at the Columbia Oval Cricket Club grounds by General John T. Cutting, the head of the Olds Motor Works' New York agency, will be a baseball game between a nine made up of metropolitan automobile writers and a team of the agency's employees. Oldsmobile owners, candidates for the car to be drawn for by lot, will parade to the Oval, starting from Broadway and Fifty-first street at noon.

MANY THINGS THAT THE CLUBS ARE DOING

BAY STATE CLUB MOVES TO THE CARLTON.

BOSTON, June 16.—The Bay State Automobile Association is shortly to move into new quarters in the Carlton Hotel in upper Boylston street. On the first of next month the clubhouse which has been occupied for several years on Dartmouth street will be vacated and the club will move to the Carlton, where a commodious and handsomely furnished suite of rooms is being prepared. The clubhouse has proved rather larger than was needed and the expense of maintaining a restaurant has been excessive. At the hotel the club will have the benefit of the hotel's restaurant and service facilities and yet will be as exclusive as in a separate house. The suite of rooms is large enough to provide for all the comforts and conveniences that are now enjoyed, and the location is excellent, the hotel being situated very near the automobile trade district and at the very entrance to Boston's splendid park system.

ACTIVITIES OF THE CHICAGO AUTO CLUB.

CHICAGO, June 15.—Autoists here have found it impossible to revive interest in the once popular social tour. This became evident last week when Chairman A. J. Banta of the runs and tours committee of the Chicago Automobile Club called off the run to the Hotel Moraine, Highland Park, scheduled for Saturday, June 6. Mr. Banta had high hopes at the beginning of the season that this would prove popular again this year and planned several attractions. However, notices sent to members regarding the Highland Park run went practically unheeded and as a result it was called off. One run will probably be held during this summer. This is the tour contemplated to Gary, Ind., the new town of the United States Steel Corporation. This run will probably prove a drawing card as it has as attractive features a visit to the steel plant and a road ability contest.

NEW HAMPSHIRE AUTOISTS BEGIN WELL.

KEENE, N. H., June 15.—To signalize its recent successful organization, the Cheshire County Automobile Association held its first annual meeting and banquet in Wildey Hall, upwards of fifty members, beside guests, being in attendance. Dr. I. J. Prouty is the president of the newly-formed club; D. W. Goodnow, vice-president; F. J. Bennett, treasurer; F. A. Wright, secretary, while the directorate is composed of Dr. J. B. Hyland, J. A. Toof and D. W. Goodnow. The organization started off with a charter membership of 40, but its list is rapidly on the increase. Every autoist in the county must be enrolled.

JERSEY CLUB FIGHTS NEW BRUNSWICK JUSTICE.

NEWARK, N. J., June 15.—Driven to desperation by the contemptible attitude of the authorities of the town of New Brunswick and of Justice of the Peace W. A. Housell in particular, the New Jersey Automobile and Motor Club has decided to undertake a campaign against both New Brunswick and its prejudiced "J. P." Two motorcycle scouts will be posted at each end of Housell's special trap to warn all comers of their danger, as it has been found that men on foot could not accomplish the purpose effectively. In addition to the man assigned to the trap, a third will be stationed at the justice's office to keep tab on the fines and to inform the victims that they can go before any other justice and be assured of fair play. The plan also includes the stationing of a man at the Tottenville ferry from Staten Island to urge all autoists crossing there to cross the bridge and pass through South Amboy to Old Bridge, the roads in that direction being fully as good as those via New Brunswick, as this diversion of traffic will rouse the interest of hotel keepers to what is going on. The club will endeavor to have another "J. P." sitting in the vicinity of Housell's office.

TEN-MILE TRACK IN PROSPECT AT BRIDGEPORT.

BRIDGEPORT, CONN., June 15.—Headed by T. H. MacDonald and Bernard Setzer, a number of the leading members of the Automobile Club of Bridgeport have been inspecting the tract of land owned by the Lordship Park Association with a view to its purchase for the construction of a ten-mile circuit on which auto road races could be safely held. The interest in automobile racing here was evidenced by the fact that 10,000 people turned out to see the Sport hill-climb. The land in question is all marsh so that in building the road it could be easily flanked on either side by a moat which would constitute effective protection for the spectators, while the lay of the land is such that every mile of the course can be seen from a natural elevation on which a grandstand could be erected. It is estimated that the road could be built for $50,000.

GENEVA HOLDS ANNUAL "OFFICIAL'S RUN."

GENEVA, N. Y., June 15.—The Geneva Automobile Club has instituted a custom of holding an annual run on the occasion of which the heads of the local government, the police, a number of prominent citizens and the representatives of the press are invited to participate in a 50-mile drive as guests of the club, and this year's celebration of the event was held June 5.

Scene at the Long Island Automobile Country Clubhouse, Bay Shore, L. I., on the Occasion of the Formal Opening.

There were 30 cars, carrying no less than 110 of the flower of Geneva's citizenship, and the run to Victor, N. Y., was made under ideal weather conditions. Though not a speed or endurance contest, a prize was offered to the driver of the car who adhered most closely to the schedule of one hour and twenty-five minutes for the distance. This was won by Dr. W. H. Jordan, whose car bore the unlucky number 13, the latter having been refused by a number of the contestants. The run was a most enjoyable affair and its holding is responsible for a most cordial feeling between autoists and the authorities during the remainder of the year, so that the custom is one that could well be followed elsewhere.

CONNECTICUT'S BODY GAINS RECRUITS.

HARTFORD, CONN., June 15.—W. F. Fuller, president, and G. K. Dustin, secretary, presided at a meeting of the Connecticut State Automobile Association, held at the Atlantic Hotel, Bridgeport, recently. Various standing committees for the season were named, and the newly-formed Rockville Automobile Club was formally admitted to membership. The association is adverse to speeding, and will do all in its power to discourage careless and reckless operation.

The New Britain motorists favor consolidation of their club with the Automobile Club of Hartford. The membership of the New Britain club is under 40, but there is plenty of funds in the treasury. It has not been definitely decided whether or not the smaller organization will be taken over by the larger. The former is not active. Mayor Landers, who is a member of the club, has just renewed his membership with the Hartford club.

ROCHESTER CLUB'S BUFFALO DELEGATES.

ROCHESTER, N. Y., June 15.—The delegates from the Rochester Automobile Club to the A. A. A. good roads convention at Buffalo in July will be President Henry G. Strong, Vice-president Wm. C. Barry, Jr., F. E. Mason, John W. Breyfogle, W. H. Campbell and Secretary Bert Van Tuyle. The club will hold a club run to Buffalo at that time which will be run in three sections, the first starting Monday, July 6, for an evening run; the second, Tuesday morning, and the last, Wednesday morning. It is expected that at least 150 cars will participate. The club's headquarters will be at the Lafayette Hotel.

NEW YORK CLUB'S TOUR STARTS FRIDAY.

The Automobile Club of America's pleasure tour of New England, which is planned to last nine days and embrace in its itinerary Poland Springs, Me., and Bretton Woods in the White Mountains, is scheduled to start on Friday of this week. The cars will be divided into three classes, each running on a separate time schedule as follows: Class 1, under 20 horsepower, 14 miles per hour; class 2, 20 to 40 horsepower, 18 miles; class 3, above 40 horsepower, 20 miles. Last Saturday it was announced that 15 cars had been entered, but the names of the entrants were withheld.

ROCHESTER CLUB'S SEVEN-DAY RUN POSTPONED.

ROCHESTER, N. Y., June 15.—Owing to the amount of business that is being done at present by the local dealers and manufacturers, it has been decided to postpone the holding of the seven-day endurance run planned by the Rochester Automobile Club, until later in the season, as it would be difficult for the business interests of automobile "row" in this city to spare a sufficient number of cars and men for an entire week just at this time.

SIOUX CITIZENS ARE FORMING A CLUB.

SIOUX CITY, IA., June 13.—An automobile club is in process of formation in this city. A club was in existence here three years ago but, owing to the small number of machines then owned in this city, it was not a success. Since then the number of cars has increased threefold.

BIG RUNS PLANNED TO WILDWOOD RACE MEET.

WILDWOOD, N. J., June 16.—The Motor Club of Wildwood is arranging for runs from New York and Philadelphia to its race meet on July 4. On Friday, the day before the races, the Quaker City delegation will start from Gloucester at 1 P.M. and the New York contingent from Jersey City at 7 A.M. It has been arranged for both runs to meet at Egg Harbor and continue together.

JERSEY'S BIG CLUB TO MOVE ON JULY 1.

NEWARK, N. J., June 16.—On July 1 the New Jersey Automobile and Motor Club will move from its former home on Broad and Chestnut streets to new quarters now being fitted up in the University Club Building, East Park street and Park place.

MUTUAL FORBEARANCE BEARING EXCELLENT FRUIT

PHILADELPHIA, June 15.—Continuing its work of breaking down the mutual feeling of enmity existing between township authorities in Montgomery county and automobilists generally, the Automobile Club of Philadelphia in its latest bulletin says:

The club has received complaints from the Lower Gwynedd township authorities in regard to the manner in which automobiles are driven at the crossings of the Bethlehem, Sumneytown, and Penllyn pikes at Springhouse in Lower Gwynedd township. The feeling in the township is not against the sped at which the automobiles are driven on straight stretches of road with no crossings. The complaints are that drivers do not give half of the road to the teams and do not slacken speed at this crossing which is conceded to be dangerous. There are now no traps in this section. We ask the assistance and cooperation of every automobile driver in Philadelphia, and we request you to bring this to the attention of your chauffeur, if you do not drive yourself. If complaints of this character can be met by inducing motorists to comply with reasonable requirements with resort on the part of the authority to legal proceedings it will be very much to the advantage of all motorists in this part of the State.

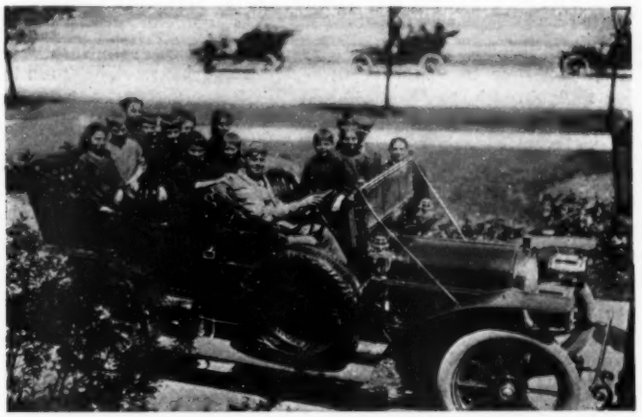
The method of mutual forbearance, instead of the chip-on-the-shoulder attitude which formerly obtained is already bearing fruit in more reasonable regulations in the various boroughs and townships, and it is the policy of the club to hold on to everything in the way of a concession it can lay hands on.

Just at present the law committee has under consideration the recent recrudescense of the "hold-up" habit in Cheltenham and Abington townships, which the Automobile Club of Philadelphia was instrumental in putting a stop to some years ago. It has been noticed that the stoppages of cars becomes more numerous with the opening of the season at Willow Grove. It is a well-known fact that upon the close of each night's concert, there is a rush for the city, and many impromptu races are pulled off. The club is and always has been opposed to the use of the roads for speeding purposes, and will do everything in its power to put a stop to the practice.

Chief Lever, of Abington, and Chief Lindsay, of Cheltenham, have both been doing a land office business, and within the past month the former's arrests have netted the township's treasury something like $600 in fines. And this dispite the comparative lenient treatment now in vogue. The authorities give automobilists a margin of five miles an hour on the 20-mile-an-hour stretches, and something more on the 10-miles-an-hour stretches; when they exceed the increased limit an arrest is in order.

Many of the drivers cannot be stopped, but their numbers are taken and they are communicated with and ordered to appear for a hearing. Some of them obey, and get off easy; others send the full amount of the fine; still others ignore the summons. The latter come up double or better when apprehended.

Vice-President Fairbanks Leads Indianapolis Parade.



Parentless Little Ones of Chicago in a Tincher.

HOW ORPHANS' DAY WAS CELEBRATED IN MANY CITIES

INDIANAPOLIS, IND., June 15.—Under the auspices of the Indianapolis Automobile Trade Association, 168 orphans of the city were given an automobile ride and outing last Wednesday afternoon. Among those who joined in the effort to make the youngsters happy were Vice-president Charles W. Fairbanks, Mayor Charles A. Bookwalter, Judge G. W. Stubbs of the Juvenile Court, Robert Metzger, chief of police, and several individual automobile owners.

There were almost fifty automobiles loaned by members of the association, manufacturers and private owners, that gathered at the foot of the Soldiers' and Sailors' Monument early in the afternoon. Each automobile was numbered and each youngster wore a tag bearing the number of the automobile.

Although an extremely busy man, Vice-president Fairbanks gladly consented to accompany the party as far as Thirty-eighth and Meridian streets, riding in a National roadster driven by Frank L. Moore of the Fisher Auto Company, and leading the long parade. Mayor Charles A. Bookwalter rode in a Premier as the guest of R. I. Eads of that company; Judge Stubbs of the Juvenile Court was the guest of P. D. Stubbs of the Overland Automobile Company, who drove an Overland, and Chief Metzger rode with Frank Staley of the H. T. Hearsey Vehicle Company in a White steamer. Four police officers rode in the car the Premier Motor Manufacturing Company is driving 100 miles a day for 100 days.

The children who were guests of the association came from the Indianapolis Orphans' Home, the German General Protestant Orphan Asylum and the Jewish Orphans' Home of this city and from the home of the Pentecost Band at Bridgeport, the children from that city coming to Indianapolis on a traction car, the automobile association paying their fares. Following a ride of several miles, the youngsters were turned loose in White City, an amusement park north of the city, where all attractions were free to them.

AGED TOO ON CHICAGO ORPHANS' DAY RUN.

CHICAGO, June 13.—The local celebration of orphans' day, which took place yesterday, with the three organizations, the Chicago Automobile Club, the Chicago Automobile Trade Association and the Chicago Motor Club, promoting the affair, was the greatest success this city has recorded in the three years it has been following the custom of giving the youngsters a free ride.

More than 175 cars were in line, and more than 1,300 participated. Departing from the usual custom, the promoters of the affair this time included the old people, an innovation which proved most popular, for it brought out many aged persons who never before had ridden in motor cars and some of them never had seen the full extent of the city's boulevard system. Sixteen institutions were represented and it is believed that no one was overlooked by the joint committee, at the head of which was Joseph F. Gunther, ex-president of the trade association.

It was believed by this committee that the children and young people would enjoy a long ride more than they would going to some amusement park for the afternoon, so this latter feature was cut out and instead a ride around the park system substituted. This in itself made a long jaunt, a 40-mile ride, and still not taking in all the roads under the supervision of the three park commissions.

Before the start each person was provided with an American

Blind Children Who Were Guests of the Boston Automobile Dealers' Association, on Way to Sharon.

flag and a bag of peanuts and candy and soon the smooth pavement was littered with peanut shucks, for the kids did not wait for the parade to start before tackling the bags. The 40-mile run took three hours.

BOSTON ORPHANS HAVE ANNUAL OUTING.

BOSTON, June 15.—The annual outing for blind children of Boston, given by the Boston Automobile Dealers' Association, took place last Thursday, and nearly one hundred and fifty little boys and girls, happy despite their affliction, were the guests of the local trade members in a trip to the town of Sharon, a beautiful country place about fifteen miles south of this city. In entertaining the little ones, about half of whom came from the Perkins Institution for the Blind in South Boston, and the other half from the Kindergarten for the Blind in Jamaica Plain, the dealers ware assisted by Dr. M. R. Deming, superintendent of the Lake Shore home, a charitable institution located on Lake Massapoag in Sharon. The outing was in general charge of Chester I. Campbell, secretary of the dealers' association, and about thirty agents and managers supplied machines, several of them driving cars themselves so as to insure a safe journey for the youngsters.

The run to Sharon was made during the forenoon and, arriving at the Lake Shore home, the youngsters were let loose to enjoy themselves, teachers and the automobile men being on the watch to see that they did not harm themselves. At noon a substantial lunch was served at the home and afterwards there were boat rides, a concert and other amusements. The trip home was begun at about 4:30 o'clock.

HARTFORD CLUB OBSERVES ORPHANS' DAY.

HARTFORD, CONN., June 13.—The Orphans' Day run of the Automobile Club of Hartford, which was held this afternoon, was a complete success. About 200 children participated. They were carried in 45 cars donated by members of the club. The run was continued to Manchester Center, thence home by way of the north road, where a stop was made at Laurel Park, about six miles from Hartford. The cars were packed within the gates of the reservation and the little ones made for the park proper and the fun was soon at its height. Each child was provided with a substantial lunch. It was a sight to watch the youngsters get away with that lunch, and those who supposed that the parentless ones possessed no table manners were disappointed. As soon as one table was vacated another squad marched in good order and took possession. A stop of about an hour and a half was made at the park, during which time the youngsters took in all the sights of the park and let loose for a good time. When all the little ones had been fed and had had a good time start for home was made.

J. D. Anderson, president of the Hartford Rubber Works, drove his own Thomas Flyer and carried a large number of the little ones. C. D. Rice, another active club member, likewise a busy man, gave up his time to make the affair a success.

The committee in charge was Albert M. Kohn, chairman; C. D. Alton, Jr., W. C. Russell, A. G. Hinckley, C. H. Gillette and H. W. Nuckols.

QUAKER CITY ORPHANS VISIT WILLOW GROVE.

PHILADELPHIA, June 15.—A clear sky and the pleasantest of June weather but served to accentuate the paucity of vehicles last Wednesday, when the Quaker City Motor Club gave the orphans of the city their annual outing to Willow Grove park. Just seventy-two automobiles—touring cars, runabouts and motor trucks—showed up at the Hotel Walton and were assigned to various homes in as many sections of the city. By judicious squeezing and crowding about 900 little ones—boys and girls, black and white, crippled and whole—with their caretakers, were stowed away, more or less comfortably, and whirled away through the green lanes and country roads to that seventh heaven of juvenile delight, Willow Grove, with its endless amusements. Arrived there, the guests were met by the committeemen and supplied with one or more—usually more—strips of admission tickets to the various attractions which add to the natural charms of the park. The committee which managed the affair consisted of Edwin H. Lewis, chairman; George W. Daley, secretary; George H. Smith, Charles J. Swain, Herbert E. Landell, Richard Sellers and Archie E. Hughes.

MONUMENTAL CITY'S OUTPOURING WAS BIG.

BALTIMORE, June 15.—Nearly 1,000 orphans were the guests of the Automobile Club of Maryland, last Wednesday, the occasion being the fourth annual outing for orphans. More than 200 cars, contributed by owners and dealers in this city, were in the line of parade which started from in front of the club's headquarters, Mount Royal avenue and Charles street. The cars were prettily decorated with flags, bunting and color schemes. When the bugle sounded for the start of the parade a loud cheer went up from the little ones, who were radiant with joy. An interesting route was arranged for the ride to Electric Park, where the guests were given supper, ice cream cones and cake. After this they were taken to the various amusements on the ground, including the Wild West and vaudeville shows. Four of the cars carried O. P. Steinwald's Band, which rendered music for the occasion. C. Howard Millikin and Dr. H. M. Rowe had charge of the arrangements.

MICHIGAN AUTOISTS REMEMBER THE ORPHANS.

GRAND RAPIDS, MICH., June 15.—Members of the Grand Rapids Automobile Club responded liberally to the call for cars to give the orphans their annual treat, and as a result several hundred of the little ones were entertained in a manner that they will long remember. The run was to Plainfield along the Grand river, a stop being made on the return drive at North Park, where lunch was served and the children amused by the various delights of the picnic ground. Automobiles have been kept busy entertaining for the whole week, a part of the official entertainment of the Merchants' Week visitors being a trip round the city in autos, while the Michigan Masons' convention was similarly treated.

PEORIA "GLIDE" CLUB HAS AN ORPHANS' DAY.

PEORIA, ILL., June 15.—This is the home of the manufacturers of the Glide cars, and owners of machines of this make have formed the Glide Club, which is a very flourishing automobile organization. The club observed the annual celebration of Orphans' Day by taking the children and their nurses from the Home of the Friendless for an outing, June 10.

THOMAS GAINS ON PROTOS IN SIBERIA.

After having been unheard of for fully a week or more, the round-the-world racers suddenly bobbed into view at Chita, the Protos' arrival there gaining the Germans the $1,000 prize offered by the Siberian Railway. According to the *Times'* advices, the Thomas was only 20 miles east of Chita on June 16, having made up three of the five days' lead of the Protos caused by the breaking of a chain. The Zust is more than 1,000 miles behind and is said to be wrecked. Chita is 1,402 miles from Vladivostok.

CONTINENTAL TO HOLD READY-FLATED CONTEST

Prizes of $10 for first and $5 for second are held up by the Continental Caoutchouc Company, to chauffeurs or others, who can replace a punctured tire with a "ready-flated" Continental in the shortest time. The contest will be held at the Continental headquarters, Broadway and Fifty-eighth street, Friday, June 26. Three trials will be allowed, time being taken with stop watches. The prizes will be paid in gold.

SHANKS LEAVES WINTON TO TAKE CHALMERS.

CLEVELAND, O., June 15.—The resignation of Charles B. Shanks from the Winton Motor Carriage Company, and his announced intention of handling the Chalmers-New-Detroit in Cleveland and Northern Ohio has stirred the trade in this city as it has not been affected for many months. No one ever conceived the idea that Shanks and the Winton Company could be separated; had such an idea developed Shanks would surely have been offered sales managerships galore, for there is not a better known man in the trade.

"Just one reason prompted the change," said Mr. Shanks in talking over the shift yesterday. "Sooner or later every young man who considers himself in the 'live class' ought to get into business for himself, and in leaving my desk and taking on the agency for the Chalmers, I am merely following out an idea which I have been considering for a long time. I have only been waiting for the right proposition, and I am confident that I have found it."

In 1899 Shanks left the Cleveland *Plain Dealer* to become Winton advertising manager. In 1902 he was chosen to manage the Winton Company's new Cleveland branch, and the following year he was given complete charge of the company's large national selling organization, extending from coast to coast. His new salesrooms will be located on Euclid avenue in the heart of "auto row," and will be a very welcome addition. Mr. Shanks is very enthusiastic over his new work, and has made arrangements to cover northern Ohio very carefully. He will have at least three men working under him, and expects to do a large State as well as city business.

E. V. PLANT MAY SUSPEND OPERATIONS.

HARTFORD, CONN., June 15.—There is a general impression prevalent that July 1 will mark the closing of the manufacturing department of the Electric Vehicle Company's plant, only the repair end being maintained after that date. Should such prove to be the case, it will be a distinct disappointment to Hartford interests, as it has been hoped all along that the company would continue in some form. The failure of the Packard negotiations for the purchase of the plant was particularly regretted, and the present status of the defunct concern's affairs is a riddle that no one appears to be able to solve. Since the resumption of manufacturing a few weeks ago, close to 100 of the 28-horsepower Columbia cars have been marketed, and by substituting a sliding gear-set for the electric transmission, all the material purchased for the gasoline-electric car could be utilized. The receivers' report for May shows the cash receipts to the end of that month to be $156,618.06, and the expenditures $36.513.85, leaving a balance in hand of $120,104.21.

CHURCHILL BECOMES WINTON SALES MANAGER.

Charles W. Churchill, who since 1906 has been manager of the New York branch of the Winton Motor Carriage Company, has been appointed general sales manager of that concern, with headquarters at Cleveland, to succeed Charles B. Shanks, who resigned that position a few days ago to engage in business for himself. Mr. Churchill has been associated with the Winton Company for a number of years and was assistant manager of the Cleveland branch before receiving the New York appointment, so that the change will be merely a return to the old territory so far as going to Cleveland is concerned.

Chas. W. Churchill.

Chas. W. Mears.

Mears Becomes the Winton Advertising Manager.

Charles W. Mears, for four years past assistant manager to Mr. Shanks, has been appointed advertising manager for the Winton Company. Mr. Mears has had a number of years' experience in newspaper and publicity work, having been at one time the editor of the *Motor Vehicle Review*, now THE AUTOMOBILE. He showed his mettle as a publicity expert by winning the Arbuckle advertising contest which carried with it a prize of several thousand dollars.

A MAXWELL-BRISCOE-BUICK COMBINATION.

Negotiations for a consolidation of the Maxwell-Briscoe Motor Car Company and the Buick Motor Car Company are still in progress. It is said that the two other makers of small cars reported to have been invited to join the combination have decided to continue business independently, and at the present moment nothing definite concerning the progress of the negotiations for the consolidation of the plants of the two large makers of low-priced cars has been made public.

Licensed Engineers on Top of the Winton Plant at Cleveland on the Occasion of Their Recent Visit.

On the occasion of their recent meeting at Cleveland, the engineers of the Mechanical Branch of the Association of Licensed Automobile Engineers made a visit of inspection to the plant of the Winton Motor Carriage Company, and a group of them are shown on the roof of one of the buildings of the factory.

Pennsylvania Rubber Company's New Tire Ambulance.

LATEST AUTO AMBULANCE IS FOR AUTOISTS.

BUFFALO, June 15.—There have been automobile ambulances of numerous different kinds brought out within the last year or two, but the autoist's interest in them has been purely academic. C. S. Pelton, manager of the Buffalo branch of the Pennsylvania Rubber Company, Jeannette, Pa., conceived the idea of a tire ambulance to play Good Samaritan to the many autoists who come to grief on Sundays and holidays and has executed it in the ingenious manner shown by the accompanying photograph. A light automobile delivery wagon has been secured and equipped with all sizes of Pennsylvania shoes, tubes and the like, as well as a complete supply of cement, patches and other necessaries, while a Prest-O-Tire tank is carried to make the work of reinflating the repaired tires easy. The car will run up and down the main traveled roads for a number of miles out of the city on Sundays and holidays and the aid thus offered will doubtless be found very welcome by many an autoist who would otherwise be stranded. During the first few days the experiment has been found to work even better than its originators had expected would be the case, so that doubtless the Pennsylvania ambulance will become a permanent fixture.

DRINK TO PULLMAN'S NEW YORK SUCCESS.

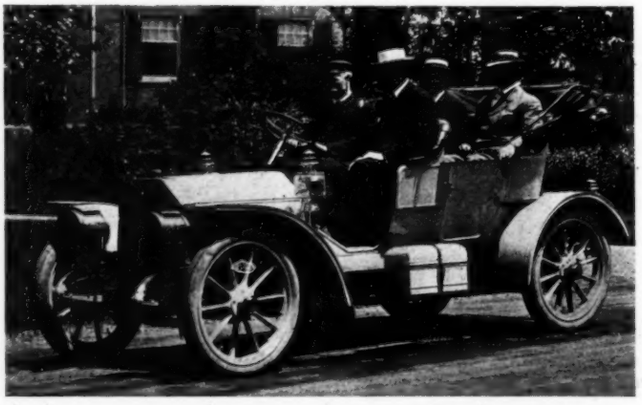
An innovation in trade dinner giving was sprung at Reisenwebers' last Friday evening, when Cimiotti Bros., New York agents for the Pullman, invited their friends of the factory and the press to join with them in celebrating the sale of the last of the 1908 cars allotted to the metropolitan agency. It was a radical departure from the usual banquet, which often has as its real object the acceleration of the transfer of cars from the store to the customer.

Sales Manager O'Connor and Treasurer Stevenson came on from the Pullman plant to assist in the jollification and a dozen automobile press men were also among the celebrants.

Major Humphrey, on behalf of the Cimiotti "big three"—Ferdinand, W. C., and Paul—pictured in his choicest Shakespeare the triumph of the Pullman, and as toastmaster inspired the guests to lofty flights of post-prandial oratory. Among those to respond were: Ferdinand Cimiotti, J. P. O'Connor, Augustus Stevenson, W. H. Horner, L. C. Howell, C. G. Percival, W. W. Lee, E. A. Ward, H. F. Donaldson, Russell A. Field, E. E. Schwarzkopf, W. J. Morgan, Alex Schwalbach, F. W. McAllister and Louis R. Smith.

PEERLESS BRINGS OUT A CLOSE-COUPLED BODY.

One of the latest additions to the Peerless line of special models is the close-coupled touring body shown by the accompanying photograph, this type of car being designed for the use of those who desire more accommodation than is afforded by the usual runabout type with its rumble seat, but do not wish to be burdened with the weight of the regular touring type of body. The

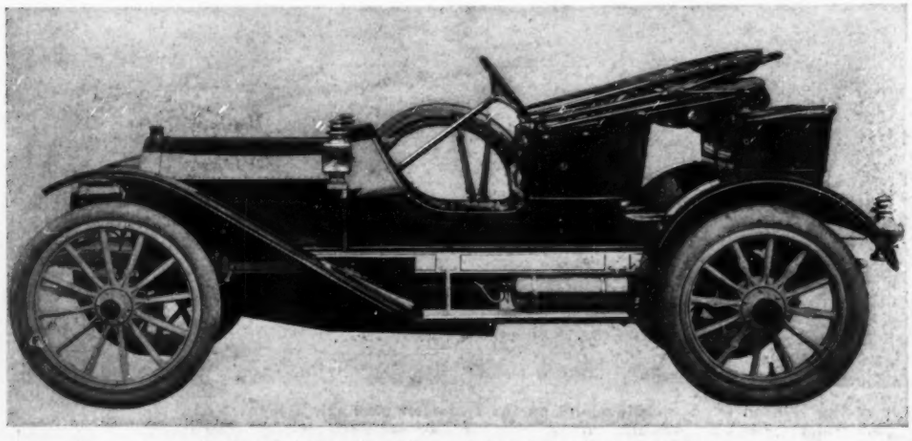


Engineer Schmidt at the Wheel of a New Peerless.

photograph shows Charles Schmidt, chief engineer of the Peerless company, at the wheel, Mr. Schmidt trying out the car after his recent return from abroad. E. H. Parkhurst, vice-president of the company, is seated beside Mr. Schmidt and H. E. Foote, the company's publicity manager, is in the tonneau.

MOON BRINGS OUT A NEW ROADSTER TYPE.

Owing to the strong demand that has existed for what may best be termed a "handy car" last season, and which is more in evidence than ever this year, the makers of the Moon cars, the Moon Motor Car Company, St. Louis, Mo., have just added to their line the neat and business-like roadster type shown by the accompanying photograph. So far as looks go, the car is able to speak for itself better than any description, its lines and whole appearance being unusually trim and racy looking, while the double rumble seat in the rear gives it capacity for accommodating four passengers, and the two who are on the rear seats need not be as uncomfortable as is the usual lot of the "man behind" owing to the easy riding full elliptic springs with which the car is equipped. The use of a much smaller tire forward adds much to the neat appearance of the car and also facilitates steering, the equipment being 36 by 3 1-2 front and 4 1-2 rear.



Neat and Attractive Lines of the New Moon Roadster.

BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

Another achievement was shared in by Pennsylvania Tires when O. F. Alcott, driving his six-cylinder Stearns with this tire equipment, won each of the three races for six cylinder cars, all in which he entered at the Jamaica Automobile meet.

The phenomenal growth of its business has necessitated the removal of the Penn Automobile Supply Company from the basement of 301 North Broad street, Philadelphia, to 236 North Broad street, where the entire building will be occupied.

In the report of Cedrino's death at Baltimore, it was stated that the accident was due to the right front tire giving way, but the wheels of the car when received by the Continental Caoutchouc Company showed that none of the tires had collapsed and all were still firmly attached to the rims.

The $2,500 contest for Winton Six-Teen-Six chauffeurs will end June 30 and the prizes will be awarded as soon thereafter as complete reports can be submitted to the judges. Nearly all the contestants have made perfect scores—that is, have had no repair expenses whatever, so that the winners are likely to be those who have piled up the greatest mileage.

Although it was purely a stock car, the Simplex made a remarkable showing in the recent time trials at Jamaica, doing the kilometer in :32 and the mile in 51 seconds, while it covered the two miles in 1:44, these times coming particularly close to the star performer of the day, and leading the other competing four-cylinder stock cars by an ample margin.

An order, which seems to mark the beginning of an automobile experiment in the public transportation problem in Boston, was received by the Atlas Motor Car Company, Springfield, Mass., June 8, for 25 taxicabs, regular stock model, painted blue with yellow panels, from a new transportation company in the Hub, which also operates in Philadelphia. This is said to be the largest order of this type of car ever sent out from Boston.

The Speedwell Motor Car Company, Dayton, O., builders of the Speedwell car, have recently found it necessary to add a night shift to their working forces in order to be able to keep up with the constantly increasing flow of orders. Five new buildings have been added to the plant this season, but the business has already outgrown the capacity of the factory and further additions are contemplated in the near future.

Frank Yerger, in charge of the Studebaker Branch in Philadelphia, recently had occasion to make a few demonstrations of the Studebaker Model 22 electric runabout in Atlantic City, but instead of shipping the car by rail, decided to drive it over the road to Atlantic City, a distance of 66 miles. Although it rained most of the time, and the roads were bad, John White of the Philadelphia Branch, made the run easily on one charge of the battery and not a bit of trouble was encountered.

"We recently received from the Knox Automobile Company a set of eight bearings taken from one of their cars after a 15,000-mile service, with a request for a condition report," says the Hess-Bright Company, Philadelphia, Pa. "The most careful measurements showed that only one bearing had more than a half thousandth of an inch radial play. All bearings were in such excellent condition that they would stand at least another 15,000 miles. This is by no means an unusual record for our bearings, as we have many instances of 60,000 miles run without trouble."

For the fire department of Greater New York the Diamond Rubber Company received in May an order for 14,000 pounds of solid rubber tires. To this order 12,000 pounds additional were added June 10, making a total of 26,000 pounds of rubber the Diamond company is to furnish for New York Fire department equipment for the coming year. The tires are of the internal wire and side wire type, and cover a great variety of sizes.

Added to the prestige of three new world's records made at the time trials at Jamaica, the Michelin Tire Company carried off the honors of the day among medium-priced cars also, a Pennsylvania car equipped with Michelin tires winning handily in its class; the owners of light cars vying with drivers of heavy cars in equipping with Michelin tires. Manager Hobbs of the New York Michelin branch reports a heavy percentage of purchases by owners weighing 2,000 pounds and less.

The National Sales Corporation has recently signed contracts with the Anderson Forge & Machine Company, Detroit, Mich., covering the sales of that company's product. By this arrangement the Anderson Company has secured the advantages of a complete selling organization, including office force and traveling salesmen familiar with the automobile accessory line, at far less expense than they could maintain an equivalent organization. The Anderson Company have a large plant particularly equipped for the manufacture of steam and drop hammer forgings in the rough or finished.

The Lozier factory at Plattsburg, N. Y., numbers among its large force several athletic organizations. The Lozier baseball team have this season proven the amateur champions of that section of the state. Last week, H. C. Pray, a member of the mechanical department, performed a feat of pedestrianism of more than ordinary ability, walking 52 miles from Lake Placid to Plattsburg through the Adirondacks in 9 hours and 55 minutes. Twelve miles of this walk was through deep sand. Harry Tyler, ex-world's champion bicycle rider, is now connected with the Lozier Company, having charge of the shipping department.

The Logan Construction Company, Chillicothe, O., has been shipping out a number of trucks recently, among them a Model S three-ton truck to the Fitzsimmons-Palmer Company of Duluth, Minn., a Model T one-ton truck to the Hoffman-Billings Company of Milwaukee, Wis.; a Model S three-ton truck to Proctor & Gamble, Ivorydale, near Cincinnati, O., prominent soap manufacturers; a Model S three-ton truck to Chris Mincy, Columbus, O., who will use it for passenger work, and a Model R delivery wagon to the John N. Loesser Mfg. Company of New York City. The Logan Company reports that the outlook for business is growing steadily better and that there is a good reason to believe that it will soon be better than ever.

"What's a record for if it's not something to be beaten at the first opportunity? One hundred cars a day wasn't even dreamed of three years ago. Last year we made it 83 in one day, last week we shipped 100 cars in one day, next week we may beat it; next year we will *have* to beat it." That comment of Henry Ford is typical of the spirit of the man—the spirit which compels him to keep on pushing ahead to larger victories. He was commenting on the record-breaking day of June 4 when a total of 101 cars were built, tested and shipped in ten hours. This means a car every six minutes, ten cars an hour. The occasion was one of a series of attempts on the part of the manufacturing department to ship more cars than were sold in the same day. In this they almost succeeded—would have, had not several telegrams come in late in the day, bringing the total sales of the day up to 117 cars—another record, by the way.

"I don't believe the work done by Stearns cars the last two weeks in races, hill climbs, etc., all over the country, has ever been equaled by any other car before," said Roy F. York, vice-president of the F. B. Stearns Co., a few days ago. "It is all the more remarkable," continued York, "when it is remembered that all these reliability runs, hill climbs and speed contests have been won by amateur drivers and private owners. Some time ago we announced that we would not participate in contests as a company, and we have rigidly adhered to that policy. Many Stearns owners have entered such events, though, and in every case the Stearns has come through victorious. On Decoration Day and the following Saturday we took part in and won numberless events all over the United States, winning first place more than a score of times. It's all right to win as a company, as we have in the past, but when amateurs take their cars and do as good work as we could it means a great deal."

PERSONAL TRADE MENTION.

W. J. Sprankle, who handles the Premier and Reo cars in Philadelphia, at 242 North Broad street, has secured the local agency for the Overland, and will at once begin enlarging his quarters to make room for the addition to his line.

Oscar Stegeman, for some time past chief engineer of the A. O. Smith Company, Milwaukee, Wis., manufacturers of automobile parts, has recently severed his connection with that concern. No announcement is made as to his immediate plans for the future.

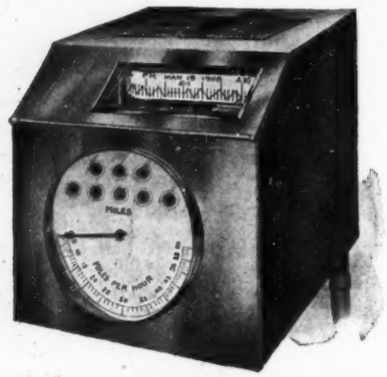
J. Robert Maynes, who first came into prominence as a driver by winning the first 24-hour race in Philadelphia in an Autocar, has joined the selling force of the West-Stillman Company, the Quaker City agents for the Pennsylvania, Atlas, Pope-Waverley, and Mercedes.

Charles R. Greuter, who has been the designer and chief engineer for the Matheson Motor Car Company, Wilkes-Barre, Pa., since 1903, severed his connection with that concern on Monday last. He will spend some time in a New York hospital in order to have an injury to his leg, received in a recent accident, properly treated and will then announce his plans for the future.

Charles M. Strieby, long connected with the Ford interests in Philadelphia, and the organizer of the Ford Motor Club, in that city, was married on Saturday last in St. Francis de Sales' Church, to Mrs. Marie Lopez Pulsifer. After the ceremony the bride and groom left for an automobile honeymoon trip during which they will visit all the resorts along the Jersey coast.

INFORMATION FOR AUTO USERS

The Recometre.—"A perfect, permanent and positive record of every movement of the car, every minute of the day, every day in the year; records distance, speed, time, and stops, from start to finish." This, in the words of its makers, the Recometre Company of America, Broadway and Seventy-fourth street, New York, briefly



EXTERNAL VIEW OF THE RECOMETRE.

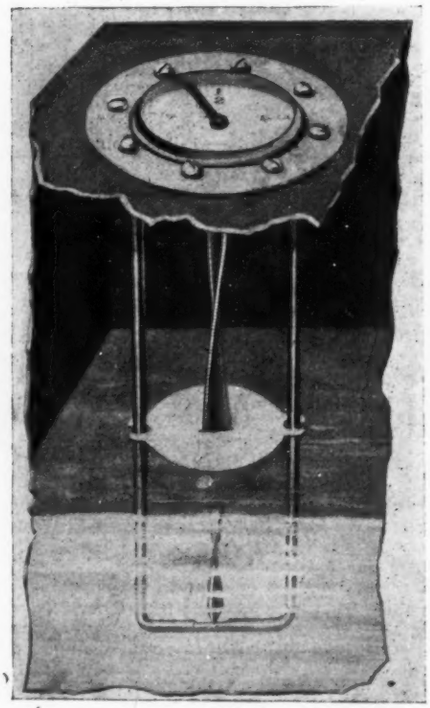
describes the purposes of this new instrument. It is a combination device consisting of a clock, a perfect calendar, showing the day, month and year, and it makes and shows a complete record, in ink, of the number of miles traveled, how many minutes it takes to make each mile and half mile, also the number of stops made, the time each stop was made, the number of minutes the car remained standing, and the exact time of starting the machine again. The record is mathematically correct, the recording pen being moved by gearing connected with the car, this record being made for every minute in the day and every day in the year. The speedometer attachment indicates speed and distance in the usual manner. The construction of the Recometre permits of the instant examination of the tape at any time of the day and has in plain view the record for the preceding half hour.

U. S. Fireless Cooker.—This is an improved method of cooking by means of retained heat that has been adapted for use on the automobile through the employment of a light and compact container made of the same material throughout—indurated fiber. This material is light, non-absorbent and hygienic, and will not rust, leak or crack, as is the case where metal is employed for the purpose. Several sizes of these fireless cookers are made, ranging from dinner pail up to the 8-quart size, and all have sufficient capacity for several dishes.

HANDY FOR AUTO RUNS AND TOURS.

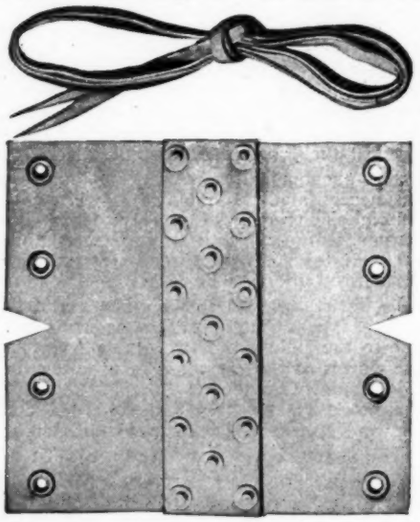
Sterling Timers for Fords.—One of the latest specialties introduced by the Sterling Alternating Ignition Company, Binghamton, N. Y., is a vertical timer designed to be placed on Ford runabouts, Models N and R, to take the place of the equipment furnished by the manufacturers. Its application is very simple, no tool work being necessary other than the drilling and tapping of two 1-4-inch holes in the cylinder to take the supporting bracket forming part of the outfit supplied. The gear is fastened to the camshaft by two small set screws, the gear case being held to the engine base with the same set screws that held the former bearing, which is replaced by the case. A dash bracket with bell crank is furnished, by means of which the timer is connected with the advance lever.

PR Gasoline Indicator.—This is one of the most practical and simple devices for indicating the depths of gasoline in a tank that has been placed on the market, the principle being that of a float rising on a spirally bent standard, thus causing the pointer to revolve about the dial. It is being manufactured and marketed by the PR Manufacturing Company, 621-659 Bellevue avenue, Detroit, Mich., and is constructed in such a simple and durable manner that it is practically indestructible. It can be attached to either a full or empty tank in less than ten minutes, no soldering being necessary. The dial face is protected by heavy plate glass, while the float is so constructed that it cannot stick at any point in its rise or fall, thus becoming dormant. The use of such a gauge not alone does away with the necessity of thrusting a dirty stick into the tank, but gives a certain indication of what mileage the car is making on its allowance of fuel, thus showing whether the motor and transmission are up to their original degree of efficiency, or not.



HOW THE PR GASOLINE INDICATOR WORKS

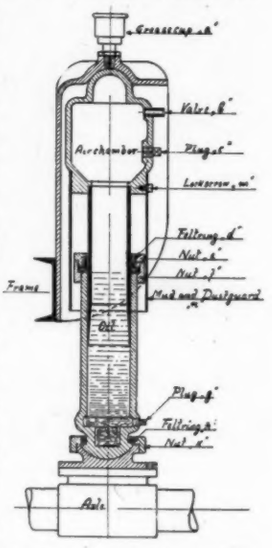
G & K Tire Sleeve.—This is a device which is the product of the Graton & Knight Manufacturing Company, Worcester, Mass., and is unique in being made from leather of a special grade from their own tannery. This leather combines extreme toughness with flexibility and long life. That part of the sleeve which takes the greatest amount of wear is of double thickness and is heavily studded with iron rivets. It is designed to be laced to the



G & K TIRE SLEEVE AND LACING.

shoe of the tire, sufficient rawhide lacing being provided for this purpose.

Trojan Hydro-Pneumatic Spring.—Among the numerous advantages claimed for this new method of suspension for the automobile, the makers outline seven of the most important as follows: (1) There is no adjustment whatever necessary on this device as the piston is self-adjusting against wear and pressure and the whole spring is constructed so as to accommodate itself to any load. (2) You can dispense with pneumatic tires and use solid, thereby eliminating all tire troubles, and increase the safety of riding. (3) No more broken springs and coming home on slow speed with blockings between axle and body. (4) Ability to go at high speed over rough streets and roads without jolt or jar or danger to your car. (5) Simple construction makes your springs wear indefinitely and renders them indestructible. (6) Fullest enjoyment and safety always. (7) Moderate prices for equipment.



SECTIONAL VIEW OF HYDRO-PNEUMATIC SPRING.

As will be noted from the accompanying sectional view of the Hydro-Pneumatic spring, it consists of an air-chamber superimposed over a cylinder partially filled with oil. The former is attached to the frame of the car, and the latter to the axle and they are designed to move into one another in accordance with the variation in the load of the car and the shocks caused by meeting obstructions. It is manufactured by the Trojan Hydro-Pneumatic Wheel Company, Inc., Watervliet, N. Y.